

INGRAM v. AIR PRODUCTS

ROBERT HARRISON

June 21, 2005

<p style="text-align: right;">Page 1</p> <p>1 IN THE DISTRICT COURT IN AND FOR RODGERS COUNTY 2 STATE OF OKLAHOMA 3 DOUG INGRAM, et al.,) 4 Plaintiffs,) 5 v.) CASE NO. CJ-2001-438 6 AIR PRODUCTS AND CHEMICALS,) 7 INC., a Delaware Corporation;) 8 SOLKATRONICS CHEMICAL, INC.,) 9 a Delaware Corporation; IARRAD) 10 GARRISON, an individual,) 11 Defendants.) 12 13 VOLUME I 14 DEPOSITION OF ROBERT JAY HARRISON, M.D., M.P.H. 15 TAKEN ON BEHALF OF THE DEFENDANTS 16 ON JUNE 21, 2005, BEGINNING AT 9:12 A.M. 17 IN SAN FRANCISCO, CALIFORNIA 18 19 APPEARANCES: 20 MR. KEITH A. WARD, Attorney at Law, of the firm 21 RICHARDSON, STGOOS, RICHARDSON & WARD, 6555 S. Lewis, 22 Suite 200, Tulsa, Oklahoma 74136, appearing on behalf of the 23 Plaintiffs; 24 MR. JOHN TUCKER, Attorney at Law, RHODES, 25 HIERONYMUS, JONES, TUCKER & GABLE, ONEOK PLAZA, 100 W. 5th Street, Suite 400, Tulsa, Oklahoma 74103-4287, appearing on behalf of the Defendants. MR. THOMAS L. KENYON, Attorney at Law, 7201 Hamilton Boulevard, Allentown, Pennsylvania 18195-1501, appearing on behalf of Air Products and Chemicals, Inc. ALSO PRESENT: MS. CANDACE J. SMITH REPORTED BY: CARYE C. TORRES, CSR #10685, CRP</p>	<p style="text-align: right;">Page 3</p> <p>1 ROBERT JAY HARRISON, M.D., M.P.H., 2 having been first duly sworn, testified as follows: 3 EXAMINATION 4 BY MR. TUCKER: 5 Q Would you state your full name for the 6 record, please. 7 A Robert Harrison. 8 Q Where do you reside, sir? 9 A San Francisco, California. 10 Q What is your profession? 11 A Physician. 12 Q We are here today to take your 13 deposition. My name is John Tucker. I represent 14 the defendant in a lawsuit in Oklahoma. 15 I would like to ask you questions. I'd 16 like you to answer them as best you can. 17 Fair enough? 18 A I understand. 19 Q If I ask a confusing question, please tell 20 me it's confusing to you so that we get an answer 21 that you mean to give. 22 Fair enough? 23 A I understand. 24 Q In fact, you have given previous 25 depositions; is that correct?</p>
<p style="text-align: right;">Page 2</p> <p>1 INDEX 2 Examination resumed by Mr. Tucker..... 3 3 4 5 6 * * * * * 7 EXHIBITS 8 Exhibit 1 was marked for identification. 9 (See "exhibit" in word index.) 10 * * * * * 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>	<p style="text-align: right;">Page 4</p> <p>1 A Yes. 2 Q How many previous depositions have you 3 given? 4 A Over a hundred. 5 Q For how many years have you been giving 6 depositions? 7 A 20. 8 Q How many times have you testified in the 9 courtroom? 10 A About ten. 11 Q The chemical which is the subject of this 12 particular lawsuit is arsine; is that correct? 13 A Yes. 14 Q And how many cases have you testified 15 either in court or by deposition that involved 16 arsine? 17 A None. 18 Q How many cases have you as a 19 professional been involved in in which you have 20 made an analysis that considered arsine? 21 A Five or six, but these have been as a 22 consulting or treating physician in my practice, 23 not in conjunction with expert review of a case for 24 legal purposes. 25 Q If we were to confine the question to</p>

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EXHIBIT

1a

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<p style="text-align: right;">Page 5</p> <p>1 evaluation of a lawsuit or a claim made by a 2 claimant, would the answer be zero, until this 3 matter? 4 A Yes. 5 Q You have had five or six experiences 6 involving arsine as a treating physician or a 7 consultant; is that what you're saying? 8 A Yes. 9 Q Tell me about those, please. 10 A These have been workers who have come 11 to me for various symptoms, referred by other 12 doctors or by word of mouth, where they've been 13 exposed to a release of gases, of which arsine was 14 possibly one of many. So I had to consider 15 whether their symptoms could have been due to 16 arsine among the potential gases that they were 17 exposed to. 18 These were workers in the semiconductor 19 industry which is in Silicon Valley, San Jose, 20 Santa Clara area, 30 to 40 miles south of San 21 Francisco where my office is located. 22 Q Was this one incident or five or six 23 incidents? 24 A Five or six incidents over the years where 25 I believe they were primarily maintenance workers</p>	<p style="text-align: right;">Page 7</p> <p>1 arsine. 2 Q And you mentioned that their presenting 3 complaints had to do with respiratory problems? 4 A Either respiratory or what I would term 5 central nervous system, problems that were 6 related to potential brain injury. Because there 7 are solvents that are widely used in semiconductor 8 manufacture, another source of toxicity, if you 9 will, is on the brain from exposure to solvents. 10 Q When you say exposure to solvents you're 11 talking about something other than arsine; is that 12 correct? 13 A Correct. 14 Q Is that what you found with respect to 15 these five or six people? 16 A Yes. It was either a respiratory irritant 17 or exposure to a solvent that was used in the 18 semiconductor manufacture. 19 Q Would it be fair to say the only reason 20 that arsine was involved in making your 21 differential diagnosis is because you're aware that 22 in that industry and with your background in 23 occupational medicine that arsine is one of the 24 chemicals or gases that is potentially present in 25 that workplace so it must be ruled out?</p>
<p style="text-align: right;">Page 6</p> <p>1 who were installing, repairing, building a 2 semiconductor fabrication facility, and there was 3 a gas release of some type. And I say some type, 4 because typically the workers weren't sure what 5 they were exposed to. Arsine is among the gases 6 that are used in semiconductor fabrication. So I 7 had to consider whether their symptoms were due 8 to arsine. 9 Q How current were the referrals when 10 related to the event that caused the exposure that 11 was complained of? 12 A At least several months afterwards. 13 These were not cases in which I provided 14 immediate treatment; that is, within hours or 15 days. 16 Q What did you determine to be the gas to 17 which these five to six individuals had been 18 exposed? 19 A I think in none of these cases was I 20 eventually able to find arsine as a source of a gas 21 release. Rather, they were other respiratory 22 toxins, that is gases that were highly irritating to 23 the respiratory tract. And I don't remember what 24 the mix of gases were. I do recall, however, that 25 they were probably in these cases not exposed to</p>	<p style="text-align: right;">Page 8</p> <p>1 A Correct. 2 Q Did any of the laboratory work on any of 3 those individuals indicate any hemolysis? 4 A No. 5 Q So getting back to what I was asking 6 originally, has there been another case in which 7 you have been involved as a physician, either 8 hired as an expert by a plaintiff or as a treating 9 physician, that actually involved arsine gas? 10 A When you say involved, do you mean in 11 which I actually diagnosed -- 12 Q In which you -- 13 A -- arsine toxicity? 14 Q That's a good way to put it. 15 A If that's the intent of your question, the 16 answer is no. 17 There are cases in which I have obviously 18 considered arsine poisoning, but I have not 19 diagnosed a previous case or been involved in a 20 case involving arsine poisoning until this 21 particular one. 22 Q Well, would you agree, Doctor, that any 23 time someone presents with self-reported 24 complaints and there's been an opportunity for 25 exposure to any material which could in some way</p>

2 (Pages 5 to 8)



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<p style="text-align: right;">Page 9</p> <p>1 lead to any of these self-reported complaints, that</p> <p>2 at that point you as an industrial physician must</p> <p>3 rule out the possibility that that is the causative</p> <p>4 agent for those self-reported complaints?</p> <p>5 A Let me make sure I understand your</p> <p>6 question.</p> <p>7 When you're saying causative agent</p> <p>8 you're referring to arsine?</p> <p>9 Q Any causative agent.</p> <p>10 A Not exactly. What I do is I take a careful</p> <p>11 history, and I obtain, where available, records of</p> <p>12 the chemicals that were used, either the material</p> <p>13 safety data sheets or the product information, and</p> <p>14 based on my experience, I whittle down the list of</p> <p>15 potential exposures and consider those in my</p> <p>16 differential diagnosis.</p> <p>17 Q Let me reask the question. I think we're</p> <p>18 saying the same thing, but I want to make certain</p> <p>19 we are.</p> <p>20 If you have a person who comes to you</p> <p>21 and reports symptoms, so we have self-reported</p> <p>22 symptomology, and this person -- and you learn</p> <p>23 either through that person or through other</p> <p>24 sources that there are a variety of chemicals in</p> <p>25 the area of the workplace that could be a potential</p>	<p style="text-align: right;">Page 11</p> <p>1 Q (BY MR. TUCKER) Would you agree that</p> <p>2 depending on what chemical any individual is</p> <p>3 exposed to, or not necessarily a chemical, a food,</p> <p>4 an element in a food, there can be all kinds of</p> <p>5 reactions a person could have to a particular</p> <p>6 exposure?</p> <p>7 A That's not correct. There is a specific</p> <p>8 list of signs or symptoms that I would expect from</p> <p>9 each particular chemical exposure.</p> <p>10 Q Let me try again.</p> <p>11 Does the fact that a chemical can cause</p> <p>12 certain side effects upon exposure and the fact</p> <p>13 that an individual reports to you that he has</p> <p>14 self-reported those side effects, is that sufficient</p> <p>15 to complete your diagnosis to say with reasonable</p> <p>16 medical certainty that that man or that person</p> <p>17 was exposed to that chemical?</p> <p>18 A Signs and symptoms that -- well,</p> <p>19 symptoms, which are complaints as reported by an</p> <p>20 individual, and signs, which is objective evidence</p> <p>21 either in a test or a physical examination, these</p> <p>22 signs or symptoms are one element that I use in</p> <p>23 making a diagnosis. There are other elements that</p> <p>24 I use to arrive at a diagnosis in an individual</p> <p>25 case. And I'd be happy to go through those later.</p>
<p style="text-align: right;">Page 10</p> <p>1 source of exposure, when you are determining</p> <p>2 what could be the cause of these self-reported</p> <p>3 symptoms, don't you have to look at each of those</p> <p>4 chemicals first to determine whether they could be</p> <p>5 the cause of those kinds of symptoms, and if not,</p> <p>6 rule those chemicals out, and if so, then you must</p> <p>7 make further analysis to rule out the other</p> <p>8 chemicals before you determine the cause or</p> <p>9 determine the validity of the self-reported</p> <p>10 symptoms?</p> <p>11 MR. WARD: Object to the form.</p> <p>12 THE WITNESS: If we're dealing with that</p> <p>13 finite group of chemicals, yes, of course that's</p> <p>14 correct. I think that your question at the</p> <p>15 beginning asked about a certain range of</p> <p>16 chemicals and the process by which I would</p> <p>17 normally go through and determine whether</p> <p>18 chemical X caused problem Y.</p> <p>19 Q (BY MR. TUCKER) Of course, we know</p> <p>20 there are wide ranges of things that can be the</p> <p>21 consequences of exposure to many different</p> <p>22 chemicals, don't we?</p> <p>23 MR. WARD: Object to form.</p> <p>24 THE WITNESS: Can you reask that</p> <p>25 question.</p>	<p style="text-align: right;">Page 12</p> <p>1 I imagine that we'll end up discussing those at</p> <p>2 some point.</p> <p>3 Q This morning you furnished us a revised</p> <p>4 CV.</p> <p>5 Is this your most current CV?</p> <p>6 A Yes, yeah.</p> <p>7 Q What has changed as you made that more</p> <p>8 current?</p> <p>9 A On the first page I added a -- an</p> <p>10 internship program that I established and direct.</p> <p>11 And on the third page I added the election to a</p> <p>12 National Organization of Epidemiologists.</p> <p>13 Q What is your home address, sir?</p> <p>14 A 1132 Dolores Street in San Francisco.</p> <p>15 Q Is that here in the City someplace?</p> <p>16 A Yes.</p> <p>17 Q And we're in one of your offices here in</p> <p>18 San Francisco, California today; is that correct?</p> <p>19 A That's correct.</p> <p>20 Q It's a very pretty city.</p> <p>21 A Thank you.</p> <p>22 Q It's a very expensive city.</p> <p>23 Are you married, sir?</p> <p>24 A Yes.</p> <p>25 Q Do you have children?</p>

3 (Pages 9 to 12)



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1 A Yes.
 2 Q How many do you have?
 3 A Two.
 4 Q How old are your kids?
 5 A 20 and 18.
 6 Q Are they in college someplace?
 7 A One is in college. The other is finishing
 8 high school.
 9 Q Have you ever been a plaintiff or a
 10 defendant yourself in a lawsuit?
 11 A No.
 12 Q Never been sued?
 13 A No.
 14 Q Have you ever been charged with any kind
 15 of a criminal offense?
 16 A No.
 17 Q I understand you have already given a
 18 legal assistant who is here with us today a copy of
 19 your complete file; is that correct?
 20 A Yes.
 21 Q Doctor, what does a clinical examination
 22 consist of?
 23 A It begins with a history, as obtained from
 24 the patient; and the history has multiple
 25 components. I don't know how much detail you

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1 university would keep part of the \$500 an hour,
 2 but if you only do it some of the time, you get to
 3 keep the \$500 an hour?
 4 A You got it.
 5 Q What is that amount of money you can
 6 keep every year? Is it by hours or by dollars?
 7 A It's by days. I believe it's 21 days.
 8 Q 21 eight-hour days?
 9 A Correct.
 10 Q For example, this year, which we're in the
 11 middle of 2005, how many consulting days have
 12 you used up?
 13 A Three or four at most.
 14 Q How about last year, how many did you
 15 use up?
 16 A Ten to 15.
 17 Q Now, does that count, for example, the
 18 work that you did for Mr. Ward on this matter
 19 where you reviewed files and so forth and you
 20 charged him?
 21 A Yes.
 22 Q That's the same deal? Counts as a day?
 23 A Yes. It counts in terms of the hours
 24 towards a day, whether that is done during the
 25 workday or done in the evening or weekends.

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1 want me to go through at this point.
 2 Q Well, let me ask you this: Do you do
 3 clinical examinations?
 4 A Routinely.
 5 Q And your charge, I understand, is \$400
 6 an hour for clinical examinations?
 7 A In the medical-legal setting. The
 8 majority of the clinical work that I do, 90-plus
 9 percent, is office treatment of either work-related
 10 or environmental exposure or injury. And the
 11 charge for that treatment is determined either by
 12 insurance or by the workers' compensation fee
 13 schedule in California. So that obviously varies,
 14 depending on the kind of insurance somebody has
 15 when they come to see me.
 16 Q Do you operate here on a salary?
 17 A Yes.
 18 Q For example, your charge to me today of
 19 \$500 per hour for your deposition, does that -- do
 20 you just give that to your employer?
 21 A It is given to my employer, but the
 22 faculty at UC San Francisco are permitted to keep
 23 up to a certain number of days of consulting
 24 income per year over and above their salary.
 25 Q So if you did this every day, the

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1 Q So last year you believe it was 10 or 11
 2 days?
 3 A Correct.
 4 Q What warrants making a clinical
 5 examination if a patient is referred in for an
 6 evaluation? What warrants your decision to make
 7 a clinical evaluation of that patient?
 8 A I'm not sure I understand your question.
 9 Q Well, for example, you have the referral
 10 of the five or six guys from Silicon Valley who
 11 turned out to be exposed to something like a
 12 solvent, right?
 13 A A solvent or irritating gas, that's correct.
 14 Q And not arsine?
 15 A Correct.
 16 Q But my question is when those guys came
 17 in, did you give them a clinical examination?
 18 A Anyone who's referred to me, to my
 19 clinical practice, I perform what you would term a
 20 clinical examination on, which entails the history
 21 and a physical examination, often a review of the
 22 records, either their medical records or exposure
 23 records or other material. So everybody who
 24 comes to my practice goes through the same
 25 routine.

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<p style="text-align: right;">Page 17</p> <p>1 Q So why is that? Why do you do that?</p> <p>2 Why not just look at the records and help them</p> <p>3 that way?</p> <p>4 A Sometimes if I just get records to review,</p> <p>5 if I'm consulting on a case, I do not examine</p> <p>6 people in my offices.</p> <p>7 In my practice I see patients who are</p> <p>8 referred to me for evaluation and typically</p> <p>9 treatment. And they show up in the office, they</p> <p>10 call, they make appointments, I see them for what</p> <p>11 you term clinical examinations.</p> <p>12 And that's 90-plus percent of my clinical</p> <p>13 practice. The other ten percent or so involves</p> <p>14 consultation only, which entails review of medical</p> <p>15 records and other material.</p> <p>16 So are you asking what determines the 90</p> <p>17 percent from the 10 percent?</p> <p>18 Q Not yet.</p> <p>19 In the legal case, some of the legal cases</p> <p>20 that you've handled, the law cases that you've</p> <p>21 handled where you've testified and given reports,</p> <p>22 you've made and conducted clinical examinations</p> <p>23 of the claimant; is that right?</p> <p>24 A Let me understand what you mean by</p> <p>25 clinical examinations. You mean people who have</p>	<p style="text-align: right;">Page 19</p> <p>1 a number, which is easier for me. Percentage-</p> <p>2 wise, probably a third to a half of those type of</p> <p>3 cases.</p> <p>4 Q These are the nonworkers' compensation</p> <p>5 cases?</p> <p>6 A Correct.</p> <p>7 Q And the workers' compensation cases, are</p> <p>8 those referred to you by the State of California or</p> <p>9 by a lawyer?</p> <p>10 A Both. The State of California, insurance</p> <p>11 companies, or a lawyer representing the injured</p> <p>12 worker.</p> <p>13 Q What is your breakdown on how many are</p> <p>14 referred to you by the lawyers representing the</p> <p>15 injured worker?</p> <p>16 A 75 to 80 percent.</p> <p>17 Q And how many times that those are</p> <p>18 referred to you do you end up providing treatment</p> <p>19 for that person, that 75 to 80 percent?</p> <p>20 A Rarely do I end up providing treatment</p> <p>21 for those individuals. And that's because under</p> <p>22 California law, an evaluating physician who</p> <p>23 performs those disability evaluations in our</p> <p>24 workers' compensation system is usually not</p> <p>25 permitted to then also become the treating</p>
<p style="text-align: right;">Page 18</p> <p>1 been seen at my office and I do a direct history</p> <p>2 from them and a physical exam?</p> <p>3 Q Right.</p> <p>4 A Yes, that's correct.</p> <p>5 Q How often do you give reports for lawyers</p> <p>6 about patients that you've never seen?</p> <p>7 A Let me separate out your answer. Most of</p> <p>8 the opinions that I give for lawyers are workers'</p> <p>9 compensation examinations for the State of</p> <p>10 California. And those people come and get</p> <p>11 examinations in my office, but I think you're --</p> <p>12 and correct me if I'm wrong, but I don't think</p> <p>13 you're asking about those.</p> <p>14 Q No, sir, I'm not.</p> <p>15 A So maybe you can restate your question,</p> <p>16 clarify the question.</p> <p>17 Q Excluding workers' compensation</p> <p>18 referrals.</p> <p>19 A So could you restate the question.</p> <p>20 Q Well, in nonworkers' compensation cases</p> <p>21 have you examined your patients or examined the</p> <p>22 people about whom you were going to testify?</p> <p>23 A Sometimes yes. Sometimes no.</p> <p>24 Q How many times have you not?</p> <p>25 A Let me give you a percentage rather than</p>	<p style="text-align: right;">Page 20</p> <p>1 physician. So our system separates out the</p> <p>2 treating doctor from the evaluating doctor.</p> <p>3 There's very little overlap</p> <p>4 Q Do those</p> <p>5 A -- in those two type of cases.</p> <p>6 Q Do those workers' compensation cases</p> <p>7 where you testify for claimants go toward your</p> <p>8 allowed 20 days per year?</p> <p>9 A No. That is charged according to the</p> <p>10 workers' compensation fee schedule, and it's</p> <p>11 billed through the billing department of the</p> <p>12 university.</p> <p>13 Q And do you get to keep any of that</p> <p>14 money?</p> <p>15 A No.</p> <p>16 Q It's a part of your salary?</p> <p>17 A Correct.</p> <p>18 Q Do you get any bonus system under your</p> <p>19 salary with the university?</p> <p>20 A No.</p> <p>21 Q Just a straight salary?</p> <p>22 A Correct.</p> <p>23 Q Is it correct that you have not examined</p> <p>24 any of the 13 plaintiffs who have been selected for</p> <p>25 this case?</p>

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1 A Yes, that's correct.
 2 Q I know from your records that you
 3 indicate that -- your report, rather, you indicate
 4 that you reviewed the examinations that a Dr.
 5 Hastings in Oklahoma performed on these 13
 6 people; is that correct?
 7 A Yes.
 8 Q Did you rely on those examinations and
 9 his findings?
 10 A In part.
 11 Q Which part did you not rely on?
 12 A Oh, I'm sorry. I relied on them in terms
 13 of my analysis of whether the 13 individuals were
 14 poisoned by arsine and may have suffered health
 15 effects. So there was one component of -- Dr.
 16 Hastings' examination was one component of the
 17 analysis that I performed.
 18 Q Maybe my question wasn't as clear as I
 19 could have made it. Let me ask it another way.
 20 You indicated you reviewed the
 21 examinations that Dr. Hastings performed and the
 22 reports that he wrote on his examinations; is that
 23 correct?
 24 A Yes.
 25 Q Did you rely upon examination that Dr.

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1 Q (BY MR. TUCKER) Well, for example, did
 2 he always keep his people and facts straight in the
 3 report?
 4 MR. WARD: Object to the form.
 5 THE WITNESS: I don't know. There may
 6 be or may not be some typos or errors in his
 7 report, but overall I found his reports complete
 8 and straightforward and understandable. I was
 9 not confused by them.
 10 Q (BY MR. TUCKER) What did his
 11 examinations consist of?
 12 A A history and physical examination,
 13 review of the records, and formulation of his
 14 opinion regarding the relationship between arsine
 15 exposure and the health problems that he found.
 16 Q How much time have you spent looking at
 17 the records in this case?
 18 A I provided you with copies of my billing,
 19 which has the number of hours that I've spent so
 20 far.
 21 Q That would accurately reflect it?
 22 A Yes.
 23 Q How much time did you spend in
 24 preparation for your deposition today?
 25 A Two hours.

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1 Hastings made and his report of that examination
 2 in formulating your opinion?
 3 MR. WARD: Object. Asked and
 4 answered.
 5 THE WITNESS: Yes.
 6 Q (BY MR. TUCKER) Do you know Dr.
 7 Hastings?
 8 A No.
 9 Q Have you ever met him?
 10 A No.
 11 Q Have you ever talked to him?
 12 A No.
 13 Q Do you know what his practice is?
 14 A No.
 15 Q Have you reviewed his CV?
 16 A I don't recall.
 17 Q If his CV is not in your file, would you
 18 have reviewed it?
 19 A No.
 20 Q Were Dr. Hastings' examinations and
 21 reports of those examinations consistent?
 22 MR. WARD: Object to the form.
 23 THE WITNESS: Yeah, I was going to ask
 24 you if you could clarify what you mean by
 25 consistent. I don't understand that word.

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1 Q How long did you meet with Mr. Ward in
 2 this case?
 3 A One hour.
 4 Q Was that yesterday?
 5 A Yes.
 6 Q Have you ever met with Mr. Ward or
 7 anyone else, any one of the plaintiffs' lawyers
 8 before?
 9 A I've spoken to them on the phone, but I
 10 have not met them personally.
 11 Q Do you know a Dr. Gad?
 12 A Personally, no. I've read his reports, but
 13 I don't know him.
 14 Q Have you ever met Dr. Gad?
 15 A No.
 16 Q Do you know a Dr. Teaf from Florida?
 17 A No.
 18 Q And you indicated you have not met Dr.
 19 Hastings?
 20 A That's correct.
 21 Q Do you know Dean Carter in Arizona?
 22 A No.
 23 Q Do you know Dr. Pike in Arizona?
 24 A No.
 25 Q Have you ever worked for this plaintiffs'

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<p style="text-align: right;">Page 25</p> <p>1 law firm before?</p> <p>2 A No.</p> <p>3 Q Are you working for them on any other</p> <p>4 matter?</p> <p>5 A No.</p> <p>6 Q I'm going to hand you back your current</p> <p>7 CV, sir. There's several pages of journal articles</p> <p>8 in which you appear as one of the authors, is that</p> <p>9 correct, on your CV?</p> <p>10 A Yes.</p> <p>11 Q Would you look through that list and</p> <p>12 identify for me the articles that deal with arsine.</p> <p>13 A (Witness examines documents.)</p> <p>14 In the section labeled "Book Chapters" I</p> <p>15 believe I discuss it as part of an overall chapter</p> <p>16 on chemicals in a textbook edited by LaDou,</p> <p>17 L-a-D-o-u. It's gone through several editions, the</p> <p>18 latest of which is 2003.</p> <p>19 And I think I might have dealt with arsine</p> <p>20 in a chapter in an emergency medicine textbook</p> <p>21 that was published in 1994.</p> <p>22 Q Is that identified in your CV?</p> <p>23 A Yes. That is edited by Kravis,</p> <p>24 K-r-a-v-i-s. I think there might be a section on</p> <p>25 arsine in that one too.</p>	<p style="text-align: right;">Page 27</p> <p>1 have that?</p> <p>2 A We have it somewhere in the office here,</p> <p>3 yes. I could try to locate it during a break if you'd</p> <p>4 like.</p> <p>5 Q That would be great.</p> <p>6 A I'd be happy to make you a copy of the</p> <p>7 pages. I don't think you want the whole book.</p> <p>8 Q Let me ask a question: I don't profess to</p> <p>9 be an instant proofreader, but the text of the one</p> <p>10 that I just read seems an awful lot like the text of</p> <p>11 the other book that you also identified, the LaDou</p> <p>12 text.</p> <p>13 A It's similar. There's been some changes</p> <p>14 in the sections, but I adapted multiple versions</p> <p>15 for the LaDou text.</p> <p>16 Q Like the old phrase, cut and paste?</p> <p>17 A Correct.</p> <p>18 Q But it looks to me like the arsine</p> <p>19 paragraphs -- and, again, I must confess, you saw</p> <p>20 me read it in about 15 seconds -- it appears to me</p> <p>21 that that's kind of a cut and paste from the LaDou</p> <p>22 text or vice versa; is that right?</p> <p>23 A Probably --</p> <p>24 MR. WARD: Objection to the form of the</p> <p>25 question concerning the length of time you took</p>
<p style="text-align: right;">Page 26</p> <p>1 Q Would you just put a little checkmark for</p> <p>2 me by that one with your pen. I don't find it on</p> <p>3 the other one, mainly because I can't find it.</p> <p>4 A Sure.</p> <p>5 MR. WARD: Are you going to make that a</p> <p>6 deposition exhibit?</p> <p>7 MR. TUCKER: Probably.</p> <p>8 MR. WARD: Well, since he's marking on</p> <p>9 it, I'm going to if you're not.</p> <p>10 MR. TUCKER: Okay.</p> <p>11 MR. WARD: Since there appears to be a</p> <p>12 communication by way of a checkmark, I'm going</p> <p>13 to ask that that be marked as a deposition exhibit.</p> <p>14 Q (BY MR. TUCKER) Do you have a copy of</p> <p>15 that book?</p> <p>16 A Looking at it, just by coincidence, it's</p> <p>17 right behind you. How lucky can you get.</p> <p>18 Q Would you just find your chapter.</p> <p>19 MR. WARD: Off the record.</p> <p>20 (Discussion off the record.)</p> <p>21 (Exhibit No. 1 marked for identification.)</p> <p>22 THE WITNESS: Yes. On page 774 there</p> <p>23 is a very short discussion of arsine.</p> <p>24 Q (BY MR. TUCKER) In the other book that</p> <p>25 you mentioned that's in its 2003 edition, do you</p>	<p style="text-align: right;">Page 28</p> <p>1 reading it.</p> <p>2 THE WITNESS: Probably that's correct.</p> <p>3 Q (BY MR. TUCKER) Could I ask you to</p> <p>4 look at it and just confirm for me. I want to make</p> <p>5 sure what differences, if any, there are. What</p> <p>6 additional information is provided in this book</p> <p>7 that's not in the LaDou text or vice versa?</p> <p>8 A I'd have to have the LaDou text next to</p> <p>9 me to see.</p> <p>10 Q Would it be worth just taking a second</p> <p>11 and having you call so we can start locating it? I</p> <p>12 don't want to break now just to do that, but if you</p> <p>13 could ask somebody to look for it. I appreciate</p> <p>14 your time is limited.</p> <p>15 (Dr. Harrison exits and re-enters the</p> <p>16 proceedings.)</p> <p>17 THE WITNESS: I stand corrected. I</p> <p>18 didn't cover arsine in the LaDou book. I thought I</p> <p>19 had it in the chemicals chapter. I do not. It's</p> <p>20 written about by another author in that book.</p> <p>21 Q (BY MR. TUCKER) Was the LaDou</p> <p>22 book -- how was the LaDou book revised for the</p> <p>23 2003?</p> <p>24 A Updated the references and some of the</p> <p>25 diagnosis and treatment recommendations;</p>

7 (Pages 25 to 28)



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<p style="text-align: right;">Page 29</p> <p>1 depended on the chemicals. Some pretty much 2 stayed the same if there was nothing new between 3 1997 and 2003. 4 Q Is arsine even mentioned in that book 5 this time? 6 A Page 549, chapter 30. 7 Q Who wrote that? 8 A Ware, W-a-r-e, Kuschner, 9 K-u-s-c-h-n-e-r, and Paul Blanc, B-l-a-n-c. 10 Q Who are those folks? 11 A Dr. Blanc is a colleague of mine in the 12 division of occupational medicine. And Dr. 13 Kuschner is a pulmonary specialist at Stanford. 14 Q And why didn't you write the chapter on 15 arsine for the 2003 edition? 16 A You know, I think -- I stand corrected. 17 I'm not sure that I included arsine in the chapter 18 on chemicals, because there was -- it was covered 19 elsewhere. I don't think I ever had anything on 20 arsine in the LaDou book. 21 Q The reference to arsine that you just 22 identified in the LaDou book, could I see that. 23 A Yes. 24 Q I hate to be so dumb, but would you 25 point -- are you talking about here?</p>	<p style="text-align: right;">Page 31</p> <p>1 Kuschner were assigned the responsibility for the 2 chapter on arsine? 3 A Dr. Joseph LaDou, who is also a professor 4 at UC San Francisco in our same department in 5 the same specialty of occupational and 6 environmental medicine, is the editor of this book, 7 and he asked many of his colleagues here at UC 8 San Francisco to contribute chapters. He 9 probably asked Dr. Kuschner and Dr. Blanc 10 because they are knowledgeable about the 11 inhalation of chemicals and gases and have -- you 12 know, it's within their subject area of expertise. 13 Q Would Dr. Blanc and Dr. Kuschner be as 14 qualified to express opinions on arsine exposure 15 as you would? 16 A I don't know. 17 Q The chapter you wrote in that book is -- 18 would either one of them be as qualified? 19 A I don't know. 20 Q Do you know what Dr. Blanc's experience 21 has been with inhalants such as arsine? 22 A I don't know. 23 Q Your chapter in this book is multiple 24 chemical sensitivity; is that correct? 25 A I have three chapters. One is on</p>
<p style="text-align: right;">Page 30</p> <p>1 A Yes. 2 Q Okay. 3 Would you tell me again who wrote this 4 chapter on arsine. 5 A Ware Kuschner. 6 Q And he's with you here at the University 7 of San Francisco? 8 A No. He's at Stanford University. 9 Q His title there is? 10 A You know, I had to look it up in the index 11 of authors in the front. I think he's associate 12 professor of medicine in the pulmonary specialty. 13 Q And Paul Blanc is? 14 A He's an occupational medicine specialist. 15 He works with me here. 16 Q Professor of medicine, division of 17 occupational environmental medicine, University 18 of California San Francisco? 19 A Correct. Same division that I'm in. 20 Q And you're also -- does that mean full 21 professor? 22 A Yes. 23 Q Are you also a full professor? 24 A Yes. 25 Q And do you know how Dr. Blanc and Dr.</p>	<p style="text-align: right;">Page 32</p> <p>1 chemicals, which is pretty much all the chemicals 2 that didn't fit into other chapters in the book. 3 There were important chemicals that didn't seem 4 to fit in elsewhere within the book. Dr. LaDou 5 asked me to cover those. So there's some 20-odd 6 that I cover in the chapter. 7 Then there's another chapter on multiple 8 chemical sensitivity that you mentioned. And 9 there's a third chapter on liver toxicology. 10 Q Do you know whether either of those 11 gentlemen from Stanford or your colleague here, 12 the professor, has had experience with arsine? 13 A I'm sorry. Do I know if they have? 14 Q If they have. 15 A I don't know. 16 When you say experience, have they 17 treated or diagnosed patients with arsine or 18 consulted on arsine cases? 19 Q Yes. 20 A I don't know. 21 Q I'm not going to introduce this whole 22 exhibit, this whole article as an exhibit, because 23 basically I'd like you to identify it for me, if you 24 would. This appears to be an article written or 25 part of a book written by Robert Jay</p>

8 (Pages 29 to 32)



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<p style="text-align: right;">Page 33</p> <p>1 Harrison, M.D. 2 Is that you? 3 A Yes. 4 Q Can you tell what book that was a chapter 5 in? 6 A It's in a book entitled "Primary Care." 7 It's actually one of the volumes in a series of a 8 book called "Primary Care" published in December 9 of 2000. It's a chapter from that book. 10 Q That's a different book than the LaDou 11 book that we have here. It's a different LaDou 12 book? 13 A It's not -- yes. It's a different LaDou 14 book. It is actually not a single volume of a book. 15 It's in a series called "Primary Care." 16 Q So is the document that you have in your 17 hand a chapter, the chapter you wrote for the 18 LaDou book that was identified in your CV? Do 19 you want to look at your CV again? 20 A Yes. 21 (Witness examines document.) 22 That is on page 7 of my CV. It's the 23 chapter entitled "Chemicals and Gases." 24 Q (BY MR. TUCKER) Mark that one for me, 25 too, would you, because there's another chapter</p>	<p style="text-align: right;">Page 35</p> <p>1 Yes. I see under chronic effects renal 2 damage. 3 Q I'm just going to read a couple sentences 4 from this. Tell me if you agree or disagree with 5 me, okay? 6 Arsine is toxic to red blood cells, leading 7 to hemolysis. 8 A Agree. 9 Q Damage to other tissues may result from 10 secondary damage from hemolysis. 11 A Agree. 12 Q Laboratory findings are those of 13 intravascular hemolysis. 14 A Agree. 15 Q Free hemoglobin level may help guide 16 management. 17 A Agree. 18 Q Exchange transfusion has been advocated 19 for free hemoglobin levels greater than 1.2 to 1.5 20 grams per dekaliter. 21 A Agree. 22 Q Do you agree with that guide as to the 23 time to treat arsine in that fashion? 24 A In terms of treatment with exchange 25 transfusion, yes, I agree.</p>
<p style="text-align: right;">Page 34</p> <p>1 that says the same thing. 2 A (Witness complies.) 3 Q Now, are you telling me that's a different 4 book than the one that Mr. Ward's holding in his 5 hand? 6 A Yes. The one he's holding in his hand is 7 a different book from the one that I just marked. 8 Q Had you reviewed or did you review the 9 chapter on arsine in "Current Occupational and 10 Environmental Medicine" as authored by your 11 colleague and the doctor from Stanford before you 12 wrote your report in this case? 13 A No. 14 Q Have you ever read it? 15 A No. 16 Q Are you familiar with the format of the 17 book, that it's divided first into acute effects and 18 chronic effects? 19 A Yes. 20 Q Are you aware that these two authors 21 identify the chronic effect of arsine exposure as 22 renal damage? 23 A I don't know. I'd have to take a look at 24 what you're referring to. 25 (Witness examines book.)</p>	<p style="text-align: right;">Page 36</p> <p>1 Q The level being 1.2 to 1.5 grams per 2 dekaliter? 3 A Agree. That's a red flag where one should 4 consider exchange transfusion. 5 Q In that 1.2 to 1.5 grams? 6 A In terms of exchange transfusion, yes. 7 When we're talking treatment here, we're talking 8 about having packed red blood cells available. 9 It's a red flag in the acute exposure situation 10 where one might consider exchange transfusion 11 depending on the clinical course. 12 Q The principal differential diagnosis 13 includes hemolysis as a consequence of other 14 causes. 15 A Agree. 16 Q Have we identified every item in your CV 17 now that deals with hemolysis -- I mean with 18 arsine? 19 A Yes. 20 Q Are there other articles in your CV that 21 deal with hemolysis? 22 A No. 23 Q Do those articles deal with hemolysis, 24 those chapters? 25 A Let me understand what you mean. By</p>

9 (Pages 33 to 36)



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<p style="text-align: right;">Page 37</p> <p>1 hemolysis, do you mean in general, like, the cause 2 of hemolysis, the differential diagnosis of 3 hemolysis? Is that what you mean? 4 Q Yes. Particularly differential diagnosis of 5 hemolysis. 6 A No. In that sense they do not. They just 7 deal with arsine and the diagnosis and the 8 treatment of arsine exposure, but not the flip 9 side, which is what is a differential diagnosis of 10 hemolysis. 11 Q What do you define as hemolysis? 12 A Destruction of red blood cells. 13 Q What are some of the causes of 14 hemolysis? 15 A There's a lot of different medications that 16 can cause hemolysis. There are immune blood 17 problems that can destroy red blood cells. There 18 are problems that involve the spleen where the red 19 blood cells can get chewed up and cause 20 hemolysis. There are different types of anemia, 21 again, probably caused by immune abnormalities, 22 where the body produces red blood cells and then 23 they get destroyed within the blood. 24 Q You've identified some medical causes of 25 hemolysis.</p>	<p style="text-align: right;">Page 39</p> <p>1 or inherent natural anemia as opposed to 2 occurring mechanically as to the way the sample 3 was selected and handled? 4 A Just from the single number, one would 5 not be able to tell the difference. In other words, 6 the number would be increased. 7 Q What other number would you look for to 8 see, to confirm that it was not caused by the way 9 the blood was drawn? 10 A Well, what we would then look for would 11 be other signs of hemolysis. We might look for a 12 hemoglobin coming out into the urine. We might 13 look for a drop -- 14 Q That's called hemoglobinuria? 15 A We might look for a drop in the red blood 16 cell count. 17 Q What else? 18 A We can look for haptoglobin, which is 19 another form of hemoglobin that can circulate 20 around in the blood. 21 Q And would you expect to see haptoglobin 22 decrease if you had hemolysis not caused by a 23 blood draw? Did I ask that in a confusing way? 24 A Yes. 25 Q If you had medical hemolysis as opposed</p>
<p style="text-align: right;">Page 38</p> <p>1 Are there mechanical causes of 2 hemolysis? 3 A I am not sure I know what you mean by 4 mechanical causes. 5 Q Well, you say that hemolysis is merely 6 the term that describes destruction of red blood 7 cells; is that correct? 8 A Correct. 9 Q Does hemolysis result from the way a 10 blood sample is drawn? Can hemolysis result from 11 that? 12 A Destruction of red cells can occur when 13 blood is drawn, that is correct. 14 Q And does the technique used in drawing 15 the blood sometimes cause hemolysis? 16 A Yes. It can be artifactual. It's not real 17 hemolysis caused by a medical problem, if what 18 you mean by mechanical I would term spurious or 19 artifactual hemolysis caused by the way blood is 20 drawn. 21 Q And when the laboratory reports a blood 22 level that you say, uh-huh, this demonstrates 23 some hemolysis or possibility of hemolysis, can 24 you looking at the laboratory number say that it 25 was caused by exposure to some chemical or gas</p>	<p style="text-align: right;">Page 40</p> <p>1 to something that the nurse did when she drew the 2 blood or the lab tech or whoever and how it was 3 handled, what would you expect to happen to 4 haptoglobin? 5 A Would you repeat that question. I'm 6 sorry. 7 Q Why would you look at haptoglobin? 8 A Haptoglobin should increase if you had 9 real intravascular hemolysis. If it was an 10 artifact, I'd expect haptoglobin to remain normal. 11 It should not increase. 12 Q It should increase -- say that again. 13 A If you had just a mechanical cause of 14 hemolysis, if it was artifactual caused by the way 15 the blood was drawn, your haptoglobin level 16 should not increase, in other words, if you have 17 intravascular hemolysis, a medical cause of 18 hemolysis, or it's caused by a chemical. 19 Q Haptoglobin should remain level? 20 A Correct. You should not see a change in 21 the haptoglobin. 22 Q If you did see a change, that change 23 would be an increase or decrease? 24 A It should be an increase. 25 Q What's the chemical process that takes</p>

10 (Pages 37 to 40)



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1 place to cause the haptoglobin level to increase?
 2 A I have to check that. I can look that up
 3 at a break to see --
 4 Q Just generally. Can you tell me
 5 generally?
 6 A I don't remember.
 7 Q But you're sure the haptoglobin would
 8 increase?
 9 A I think it would increase. I guess by your
 10 question you're suggesting it should decrease.
 11 Q Well, you're the doctor. I'm just sitting
 12 here, poor dumb lawyer from Oklahoma.
 13 A You look smart to me.
 14 Q You just like my bow tie. It fits in San
 15 Francisco.
 16 MR. WARD: It's ill fitting in Oklahoma.
 17 MR. TUCKER: Fits in Oklahoma.
 18 MR. WARD: Okay.
 19 MR. TUCKER: And it never gets in my
 20 soup.
 21 Q (BY MR. TUCKER) In your practice,
 22 other than the five or six people who came to you,
 23 were referred to you to rule out the various things
 24 they might have been exposed to, has anyone ever
 25 reported to you and said, I've been exposed to

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1 arsine gas and I want you to evaluate or treat me?
 2 A No.
 3 Q Do you know if your colleague that wrote
 4 that chapter that we read from a little bit ago has
 5 had that experience?
 6 A I don't know.
 7 Q Let me give you back your CV here, if I
 8 might.
 9 You've listed a lot of references that you
 10 relied on in forming your opinions. Did you read
 11 all those just to do this report, or are those things
 12 that you had read previously and had an
 13 understanding about?
 14 A You mean in the report that I generated
 15 with a list of references?
 16 Q Yes.
 17 A Both. Some I looked at just for this case.
 18 Some I had been familiar with before.
 19 Q And how did you determine which
 20 references to list?
 21 A I did a literature review, a search of the
 22 medical literature called PubMed, which is the
 23 general on-line database of medical articles.
 24 Q Do you have kind of a general master list
 25 of literature reference materials that you list

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1 whenever you write a report and then you add
 2 specific things to the case you're handling?
 3 A No. I usually do it particular to the case.
 4 Q That's a pretty long list of pretty
 5 complicated citations.
 6 Did you have all those typed up for this
 7 report, or did you cut and paste?
 8 A I have my CV in front of me. Did you
 9 mean to give me the report and the references?
 10 Q The references that came with your
 11 report. I'm sorry, your report.
 12 A Okay. So I'm sorry. The question was
 13 did I --
 14 Q You have all those pages of references on
 15 your report.
 16 A I think I have a page or two, that's
 17 correct.
 18 Q Did you read all those things for this
 19 case?
 20 A Yes.
 21 Q And did you charge for all that?
 22 A Yes.
 23 Q I see two bills, November 29 and
 24 January 7, a total of eight and a half hours.
 25 Does that represent all the time you

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1 utilized reviewing all the records in this case?
 2 A I think there's a subsequent bill.
 3 Q There's a bill for preparation of your
 4 report.
 5 A Yeah. And there was two more hours
 6 reviewing the defense expert reports.
 7 Q Which you haven't billed for yet?
 8 A No. I have. There are two hours on
 9 there.
 10 Q The review of expert reports is not your
 11 reports, that's the other people's reports?
 12 A Right. I got the defense expert reports,
 13 reviewed those, and then prepared the second
 14 report that I made in this case.
 15 Q Okay.
 16 A So it looks like there's a total of ten and
 17 a half -- I think it's something like 12 and a half
 18 hours so far.
 19 Q I find a letter in your file which is dated
 20 April 30, 2005, addressed to Mr. Fred Stoops.
 21 A Yes.
 22 Q What is that?
 23 A That's the second report that I wrote.
 24 Q Did you send that to them?
 25 A Yes.

11 (Pages 41 to 44)



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1 Q Did you tell them not to give it to us, or
2 do you know why they wouldn't give it to us?
3 A I don't know.
4 MR. TUCKER: I'm inquiring why didn't
5 you send it to us.
6 MR. WARD: Because there was a date by
7 which the reports were to be exchanged, and we
8 couldn't get it in a timely fashion, so we didn't do
9 it.
10 MR. TUCKER: Okay.
11 MR. WARD: You're welcome to have a
12 copy of it, but we didn't want you to bitch about
13 getting it late.
14 Q (BY MR. TUCKER) How many depositions
15 have you given?
16 A Hundreds. Well over a hundred. That's
17 over the last 20 years.
18 Q How many times have you testified in a
19 trial?
20 A About ten.
21 Q Have you testified this year?
22 A No, not at trial.
23 Is that what you meant?
24 Q Yes.
25 A Yeah. No, not at trial.

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1 trials?
2 A Civil law trials. Workers' comp trials are
3 rare.
4 Q The one to two cases that you've given
5 depositions in this year, what were they about?
6 A I'd have to check. I just could look up
7 my -- just go back from January and could tell you
8 in three minutes by looking at my appointment
9 book.
10 Q When you filed your Rule 26 report, as
11 required by the Federal Rules of Civil Procedure,
12 there was an identification of your cases, but
13 because you filed it year end of '04, nothing for
14 '05 was listed.
15 What cases would be added for '05?
16 A Do you want me to look at my
17 appointment book? I could tell you really quickly.
18 Q I basically want to know if you have any
19 new case in '05 that you didn't list in your '04
20 case list.
21 A I might, but I can't tell you offhand
22 without looking at my appointment book. Because
23 I could look and tell you
24 MR. TUCKER: Why don't we just take a
25 break.

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1 Q Have you testified in depositions this
2 year?
3 A Yes.
4 Q How many depositions?
5 A Four or five.
6 Q What was the nature of the other
7 depositions you gave this year?
8 A I'd have to give you -- I'd have to look
9 those up. In general, the majority of the
10 depositions involve workers' compensation cases
11 where I write a report on the cause of an injury or
12 illness and any associated disability, and then
13 there's some follow-up deposition involving that
14 report.
15 So I could go back and look at my
16 calendar and see
17 Q Let me rephrase the question.
18 A -- what the nature of those were.
19 Q How many depositions have you given this
20 year that were not workers' compensation related?
21 A Very few. There may have been one or
22 two.
23 Q And the ten trials that you testified, are
24 those workers' compensation trials or civil law
25

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1 (Recess taken.)
2 Q (BY MR. TUCKER) This is a copy of what
3 was attached to your report as received from the
4 lawyer that you're here for. If you'd like to look
5 at that for me. The -- I notice that we checked at
6 least five of those articles that Dean Carter is
7 included as an author on the article; is that
8 correct?
9 A Yes.
10 Q Do you know Dean Carter?
11 A No.
12 Q Did you look up to see who he was?
13 A No.
14 Q Do you have any idea who he is?
15 A Just by reviewing his CV that was
16 attached to his expert report.
17 Q You read that separately from this; is
18 that right?
19 A Separately?
20 MR. WARD: Object to form.
21 Q (BY MR. TUCKER) You read his CV
22 separately from when you prepared your report.
23 You had not seen his report when you prepared
24 the list of citations that's in your hand?
25 A That's correct.

12 (Pages 45 to 48)



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1 Q And at least five of the articles that were
2 in your literature review were written by Dean
3 Carter; is that correct?

4 A Yes.

5 Q From reviewing his articles and reviewing
6 his CV, could you tell whether you had ever read
7 any of his articles previously?

8 A I don't know.

9 Q Would you have read any of his articles
10 or the articles in his CV authored by him in
11 connection with the case where you were ruling
12 out arsine?

13 A Possibly, but I don't remember
14 specifically.

15 Q After you received his report and reviewed
16 it, did you make a determination as to whether he
17 is an expert on arsine?

18 A I did not. I don't have an opinion about
19 that.

20 Q And after reviewing his report, do you
21 have an opinion about that?

22 A No.

23 Q His articles, however, do form a part of
24 the basis for your opinions in this case; is that
25 right?

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1 Q Actually, I'm, first of all, referring to all
2 litigation, however you would break that apart.

3 What percent of your income that comes
4 to your pocket is from litigation as opposed to
5 other activities in connection with your
6 profession?

7 A 90-plus percent of what I do is in
8 treatment, research and teaching. And I receive a
9 salary for that.

10 Q What is your salary?

11 A It's about 150,000 a year. I couldn't give
12 you an exact figure, but it's in that ballpark.

13 Then there are cases for which I provide
14 consultation, like this one, that's up to that 21
15 days per year that I discussed earlier. And that's
16 probably on average 20- to \$25,000 per year. It
17 varies from year to year depending on the referrals
18 that I might get.

19 Q And that's the only litigation income you
20 have, is 20- to \$25,000 per year?

21 A Directly. That's why I was asking you to
22 clarify your question, because --

23 Q What's the indirect litigation income?

24 MR. WARD: Do you recall he said that
25 workers' comp is part of his salary?

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1 A That's correct.

2 Q Now, how many years did you say you had
3 been providing testimony for attorneys?

4 A 20.

5 MR. WARD: Object to the form of the
6 question.

7 Q (BY MR. TUCKER) How old are you?

8 A I'll be 51.

9 Q Well, I was 51.

10 MR. WARD: I was too.

11 Q (BY MR. TUCKER) When will you be 51?

12 A September.

13 I had my colonoscopy.

14 Q Thank you for sharing that with us.

15 A It's the 50th birthday present.

16 MR. WARD: There seems to be a
17 conspiracy around doctors of that ilk, to describe
18 it as your 50th birthday present.

19 Q (BY MR. TUCKER) What percentage of
20 your income is derived from litigation and what
21 percent is from your straight salary?

22 A I just want to be sure I understand.

23 When you say litigation, you're not referring to
24 workers' compensation? You're referring to the
25 other medical-legal consultation?

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1 Q (BY MR. TUCKER) What's the indirect
2 litigation income?

3 A I just want to clarify that when you say
4 litigation, there are patients referred to me who
5 have a disputed workers' compensation case in the
6 State of California, and so I guess you might say
7 they're technically in litigation. They're
8 represented by an attorney in many cases.
9 Sometimes they represent themselves. But I guess
10 you would consider they're technically in
11 litigation. I derive no additional salary or benefit
12 from those cases.

13 Q What percent of that 80 percent of your
14 time that you said you spend on care and
15 treatment of people, and research, is in those
16 cases that are referred to you for evaluation and
17 treatment?

18 A I'd be happy to answer that question, but
19 it might be easier if I described the proportion of
20 my workweek and my time and the various
21 activities that I do.

22 Q Please.

23 A It will give you a complete picture, and I
24 think I would answer your question.

25 Two days a week I see patients. And I see

13 (Pages 49 to 52)



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1 patients in an outpatient department at the
2 University of California San Francisco in the
3 specialty of occupational and environmental
4 medicine. That's an outpatient department
5 similar to gastroenterology or cardiology or
6 hematology, any of the other specialties.

7 Three days a week I teach and I do
8 research. And I spend that time with the
9 California Department of Health Services, which is
10 a public health agency for which I am also
11 salaried. I don't see patients there. I run an
12 epidemiology and a research group supported by
13 public money from the State of California and also
14 by a lot of research grants from the federal
15 government.

16 So of the two days a week that I see
17 patients at UC San Francisco, 90 percent of that
18 time is in workers' compensation diagnosis and
19 treatment or consultation. I might see somebody
20 once, either as part of a disputed workers'
21 compensation claim or referred by another doctor,
22 or an employer, or self-referred, word of mouth
23 from a former patient. And those are typically
24 billed to workers' compensation insurance
25 carriers, sometimes to somebody's regular health

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1 A The way that the clinic revenue comes in
2 is through -- primarily through workers'
3 compensation cases, because that's the nature of
4 my specialty, people are injured or made ill on the
5 job. And that's the form of insurance that they
6 have.

7 Q Did you have any --

8 A But I also have research grants at the
9 university which largely covers my salary.

10 So if I saw no patients during my two
11 days of practice, or if I saw 5,000, it really
12 wouldn't make a difference. We're here primarily
13 to consult and, frankly, to teach. We have all
14 sorts of students that I supervise as part of my
15 teaching practice.

16 Q Are you the only one that reviewed the
17 materials in preparation -- in anticipation and
18 preparation of the report in this case?

19 A Yes.

20 Q Does anyone else do review of materials
21 for you?

22 A No.

23 Q Does anyone else do a literature search
24 for you?

25 A No.

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1 plan.

2 The other 10 percent or less of my time in
3 those two days a week involves other forms of
4 legal consultation, which is the form of this
5 particular case. And for that I am permitted to
6 derive outside income, which is roughly 25,000,
7 but it sometimes is less, sometimes a little bit
8 more, depending on word-of-mouth referrals.

9 Q Well, if you did not receive these workers'
10 compensation referrals, would you receive the
11 same compensation here at the -- your teaching
12 position and treating position?

13 A Yes. I mean, ultimately -- the easy
14 answer is yes, but ultimately, if you know
15 anything about the way universities are
16 structured, the department chair might come to
17 me and say, well, we're not covering your salary.

18 Q You need to see more outside cases and
19 give us the revenue?

20 A No, would probably say go get more
21 research grants, or see more patients in the
22 clinic.

23 Q And the way that you solve that issue is
24 you see workers' compensation cases; is that
25 right?

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1 Q Do you have any assistants who did any
2 work on this case?

3 A No.

4 Q Do you have any students that did any
5 work on this case?

6 A No.

7 Q We took a break. During that break did
8 you identify your 2005 cases?

9 A Yes.

10 Q Could you give me that updated list,
11 please.

12 A Four cases. Three of them happen to
13 involve exposure to mold in homes. I'll give you
14 the name of what I believe to be the identifier on
15 the case.

16 Q Okay.

17 A Waskey, W-a-s-k-e-y, on behalf of
18 plaintiff. Attorney is Breall, B-r-e-a-l-l. Tan,
19 T-a-n, on behalf of plaintiff. The attorney is
20 Lifschitz, L-i-f-s-c-h-i-t-z. Chavez, on behalf of
21 plaintiff. Same attorney, Lifschitz. And then the
22 fourth case is Alvarez, A-l-v-a-r-e-z, on behalf of
23 plaintiff. Attorney is Michael Freund, F-r-e-u-n-d.
24 And that's a at least 50-, perhaps more, plaintiff
25 case involving exposure to metam sodium and a

14 (Pages 53 to 56)



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1 secondary toxic chemical after it was applied to an
2 agricultural field adjacent to a homeowners tract
3 in Southern California, an inhalation exposure
4 situation to homeowners who were next to a field
5 that was an overspray.

6 Q Where is the Alvarez case pending?

7 A I could look that up for you. The
8 plaintiffs live in Arvin, A-r-v-i-n, California. The
9 attorney is in Berkeley. I don't know where the
10 case is pending.

11 Q What about Waskey and --

12 A These are attorneys in --

13 Q -- Chavez?

14 A Sorry. These are attorneys in San
15 Francisco, but I don't -- and these were homes in
16 the San Francisco Bay Area. So I assume it's one
17 of the San Francisco Bay Area counties.

18 Q Well, if you would during -- before we
19 resume tomorrow, if you can get the case number
20 and case style like you did in the cases you
21 provided for us.

22 A Yeah. I have to pull the files.

23 Q You'd be able to do that, wouldn't you?

24 A Yes.

25 Q Have you testified in both those cases

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1 attorney in Montana.

2 Q So when I look through this case list,
3 every time I see Larry Lockshin and a railroad, I
4 know it has to do with a shoulder and back
5 ergonomic injury?

6 A Yes.

7 Q And would that be true of any other case
8 I see involving a railroad defendant?

9 A Yeah. Those would all be
10 musculoskeletal.

11 There is another case that I'm working
12 on. I'm trying to think of the attorney. It's --
13 again, it's a railroad case, but it's lung cancer,
14 exposure to diesel exhaust. I could look that one
15 up too, if you want me to.

16 Q That's a 2005 case?

17 A Yeah. I have haven't done a deposition or
18 court appearance. I've looked at the records.

19 Q How was the person exposed to diesel
20 exhaust?

21 A A mechanic on the train maintenance
22 yards. Idling locomotives.

23 Q Did you find that was the proximate
24 cause of a form of lung carcinoma?

25 A Yes.

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1 this year?

2 A I've done depositions in all four. No
3 court testimony.

4 Q Other than that do you have other new
5 cases in '05 in which you have not yet given a
6 deposition?

7 A I know of one. There may be others. It
8 would be more difficult for me to -- well, possible
9 for me to see if there are others that are pending.
10 The one that comes to mind is a railroad case in
11 Montana against Burlington Northern Railroad,
12 shoulder and back injuries. I've done a number of
13 examinations for possible ergonomic and
14 musculoskeletal injuries among railroad workers
15 for Southern Pacific Railroad, Burlington Northern
16 Railroad.

17 Q On behalf of the railroad or on behalf of
18 claimant?

19 A Claimants.

20 Q Is it all through one lawyer?

21 A The particular case that I just started is
22 one attorney. I've done previous depositions
23 which have been listed for you on the table. Larry
24 Lockshin is a Sacramento attorney who I've done
25 several cases for over the years. This is another

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1 Q What form of lung carcinoma is
2 proximately caused by working in a diesel rail
3 yard?

4 A I think this case had an adenocarcinoma
5 of the lungs. Diesel exhaust, known carcinogen,
6 nonsmoker.

7 Q I'm going to ask you about some of these
8 cases on your recent case list, if you'd tell me
9 what they're about.

10 Bonnie Ballou, attorney Peter Nicolaysen.

11 A You're going to stretch my memory. I
12 don't remember.

13 Q Well, there's no case number and no
14 location. So we weren't able to look for it
15 ourselves.

16 A What year was it?

17 Q 2001, October 15.

18 A How much does it really matter to you?
19 Because I could find it, but it's going to mean
20 digging in boxes of records. That case -- anything
21 more than two years old has been archived.

22 Q Let's hold it and talk about it.

23 How about Benner versus Becton
24 Dickinson, Shery Levy, attorney?

25 A Needle stick. I think that was hepatitis.

15 (Pages 57 to 60)



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<p style="text-align: right;">Page 61</p> <p>1 The issue was whether or not there was an 2 alternative safety engineer device manufactured by 3 Becton Dickinson. 4 Q What was your testimony about? 5 A Was the injury caused by exposure to the 6 sharp device, and were there alternatives that are 7 accepted and widely used. 8 Among other responsibilities I've had over 9 the years here at UC San Francisco is director of 10 our employee health service. So I've established 11 and overseen programs to implement safety 12 devices in our hospital. 13 So I gave an opinion about whether there 14 were safety engineer devices that would have been 15 available to help prevent the infection. 16 Q Where was that case? 17 A The law office is in Philadelphia. 18 Q Biggs versus Chung, attorney James 19 Donahue. 20 A What year was that? 21 Q November of last year. 22 A Mold case. Homeowner. 23 Q What kind of mold? 24 A Well, we're talking in all these mold 25 cases -- if we're going to go through this list -- of</p>	<p style="text-align: right;">Page 63</p> <p>1 you're a passenger or a flight attendant is a 2 severe odor, sometimes a mist that you can see in 3 the air, respiratory and neurological problems. 4 Q Does this happen all the time? 5 A No. 6 Q What was the outcome of that? 7 A Don't know. 8 Q Beth Buie? 9 A Who was the lawyer, and what was the 10 year? 11 Q Larry Bagby, 2002, B-u-i-e, "Buie." 12 A Don't remember. 13 Q Brad Choate, Robert Fowler, attorney. 14 A I don't recall. 15 Q Gaba versus DiPaolo, Brian McConaty, 16 attorney. 17 A The only thing I remember about that one 18 is I've done a few medical malpractice cases over 19 the years, and I think that was one of them. 20 Q Did you testify twice in that case? 21 A Did I list two depositions? 22 Q Two days of testimony. 23 A Oh, yes, I must have. 24 Q Where was that? 25 A I don't remember.</p>
<p style="text-align: right;">Page 62</p> <p>1 a variety of different types, and I don't remember 2 in each of the cases what exact mold species there 3 were. Again, if it's important to you, I can go pull 4 their chart. 5 Q What happened in that case? 6 A I don't know. You mean in terms of the 7 outcome? 8 Q Yes. 9 A I don't know. 10 Q Bradford versus Alaska Airlines. 11 A Several plaintiffs' exposure aboard Alaska 12 Airlines planes to hydraulic fluid, jet oil, and/or 13 their pyrolysis products that get sucked into the 14 ventilation system during mechanical problems. 15 Q Was there a fire on the airplane or 16 something? 17 A No fire, but it has to do with a problem 18 with some of the seals on the hydraulic systems, 19 and ways in which -- 20 Q So what happened? 21 A -- these chemicals get into the aircraft. 22 Respiratory and neurological problems to 23 the flight attendants. 24 Q What happened to the airplane? 25 A Oh, basically, what you experience if</p>	<p style="text-align: right;">Page 64</p> <p>1 Q Doke versus Estep. 2 A Don't remember. 3 Q Benjamin Stringer. 4 A Don't remember. 5 Q That was a year and a half ago. 6 A Don't remember. 7 Q Dunker versus Diablo Auto Body, Sean 8 Gleason. 9 A Toxic chemical of some type. I don't 10 remember anything else. 11 Q Robert Franta, attorney is Daina Van 12 Devort. 13 A Don't remember. 14 Q Green versus Blackburn Propane, Scott 15 Gallagher. 16 A That one was pretty recent. Carbon 17 monoxide exposure from a faulty water heater, 18 sleepover party of eight- to ten-year old kids, 19 almost died, brain injury. 20 Q Where was that? 21 A Midwest somewhere. I know that's a big 22 part of the country. East of the Mississippi. 23 Q Peter Grimwood, lawyer Derek Jacobsen. 24 A Tanker men unloading oil tankers in the 25 San Francisco Bay, exposure to multiple solvents,</p>

16 (Pages 61 to 64)



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1 probably benzene, some type of hematological
2 malignancy. I don't remember which. That was a
3 longshore case or something like that.

4 Q Patricia Horkan, A. Gary Bell.

5 A I don't recall.

6 Q That was about a year and a half ago.

7 A Don't recall.

8 Q IBM workers litigation, Amanda Hawes,
9 attorney.

10 A Well, I can't forget that one. I was
11 deposed for years. You'll see that one has the
12 most depositions listed, and there was a court
13 appearance about a year and a half ago.

14 Two test plaintiffs, breast cancer,
15 non-Hodgkin's lymphoma, multiple defendants,
16 ultimately IBM remained. Jury trial on whether
17 IBM had actual knowledge that they produced
18 systemic chemical poisoning that in turn led to
19 cancers in these particular plaintiffs.

20 Q What was the outcome of that case?

21 A Victory for IBM, jury ruled they could not
22 find IBM had actual knowledge.

23 Q A defense verdict?

24 A Correct.

25 Q Steven Knickerbocker. Attorney Jonathan

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1 very high blood lead. The question was was it
2 from her home that had lead paint, or from
3 intentional ingestion of something unknown.
4 Never were really able to determine whether she
5 did ingest something, like a snack food.

6 Q What happened to that case?

7 A I don't know.

8 Q Pena versus Santa Clara County, Donna
9 Diaz, attorney.

10 A One of many employees for Santa Clara
11 County referred by their employer, building
12 damaged by water, mold overgrowth.

13 Q Perez versus Chevron, Rafael Metzger.

14 A Leukemia in a maintenance worker at one
15 of the Bay Area oil refineries.

16 Q Why wasn't that a workers' comp case?

17 A She does have a workers' comp case also.

18 In fact, I just got her records from her workers'
19 comp lawyer. I don't know who -- there was a
20 defendant in that case. So it was definitely civil
21 litigation. I don't know why.

22 Q Jeremy Ritchie, Richard Shapiro, lawyer.

23 A I don't remember.

24 Q Smithberg versus Spiker, Danielle Ellis.

25 A I don't remember.

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1 Hartman.

2 A Don't recall.

3 Q McKibben versus Ziebart.

4 A Glyco ether, which is a type of solvent,
5 exposure in a rust-proofing shop. Leukemia in a
6 front office worker who may have -- who probably
7 also had some exposure to the solvent. There was
8 another leukemia case of the same type also from
9 that exact same shop.

10 Q And you opined that was more than
11 coincidence?

12 A Correct.

13 Q What was the outcome of that case?

14 A I don't know.

15 Q But that was not workers' compensation?

16 A Correct.

17 Q Where is that case?

18 A Midwest. I have to look that up.

19 Q Robert Moreland, Karen Kahn, attorney.

20 A Homeowner exposed to mold.

21 Q Ortiz versus Mission Housing.

22 A Lead poisoning. Defendant was -- well, I
23 think it was either the San Francisco Housing
24 Authority or the building owner or the contractor
25 responsible for the remediation. A woman with

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1 Q Tang versus Marisco, Steven Birnbaum.

2 A Longshore case, warehouse worker
3 unloading ships, lung cancer. I think it was
4 either something like bunker oil or coal dust or
5 something like that.

6 Q What happened to that case?

7 A Don't know.

8 Q Tolbert versus Monsanto, Mark Engelhart.

9 A I think that was the one in Louisiana,
10 large class action alleging a whole variety of
11 different health effects from exposure to dioxin
12 from a Monsanto facility, environmental
13 contamination.

14 Q Did you only have one plaintiff out of
15 that class action, or more grammatically correct,
16 have only one plaintiff?

17 A No. I think there were multiple
18 plaintiffs.

19 Q How many did you have? The case is
20 listed under one name. I guess I'm asking did you
21 have multiple plaintiffs?

22 A I had multiple plaintiffs. More than ten,
23 but less than 30. I mean, there were multiple
24 plaintiffs.

25 Q What happened in that case?

17 (Pages 65 to 68)



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1 A Settlement.
 2 Q Did you examine any of those plaintiffs?
 3 A I don't remember.
 4 Q Did you examine in the McKibben versus
 5 Ziebart case either the office worker or the other
 6 worker?
 7 A No.
 8 Q In the Bradford versus Alaska Airlines
 9 case, did you examine the flight crew and
 10 passengers that were involved in that case?
 11 A This case only involved the flight crew;
 12 and I did examine them.
 13 Q Was that a California-based flight crew?
 14 A Seattle-based.
 15 Q And the Peter Grimwood case, the case of
 16 the tanker man with the solvents, did you examine
 17 Mr. Grimwood?
 18 A No.
 19 Q Ortiz and Mission Housing, the lead case,
 20 did you examine that woman?
 21 A Yes -- no. I talked to her on the phone.
 22 I take it back -- no, no, no. I was right in the
 23 first place. She did come into my office.
 24 Q Pena versus Santa Clara County, the mold
 25 case, did you talk to that person?

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1 equipment installer and maintenance man, solvent
 2 and radiation exposure -- sorry, sulfuric acid and
 3 radiation exposure. That was in Boise, Idaho.
 4 Q Did you examine Mr. Wilson?
 5 A No.
 6 Q What happened in Mr. Wilson's case?
 7 A Decision on behalf of plaintiff.
 8 Q And that was what kind of a case?
 9 A Nasal cancer.
 10 Q I mean, what was the claim? Against
 11 whom? For what?
 12 A It was an Idaho workers' compensation
 13 case against the employer.
 14 Q Now, are there any other workers'
 15 compensation cases on this list I've just gone
 16 through with you? Is that the only one?
 17 A When you say are there other workers'
 18 compensation cases, I've got hundreds of workers'
 19 compensation cases.
 20 Q On this list that I just read to you from,
 21 your list of cases that you provided to me.
 22 A Oh, I see. I think that would be the only
 23 one.
 24 Q On this list of cases which is, let me
 25 count them real quick, it's about 35, the one --

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1 A Yes.
 2 Q Examine that person?
 3 A Yes.
 4 Q Townsend versus Zhang.
 5 A Who was the lawyer?
 6 Q Martin Ambacher.
 7 A Don't remember.
 8 Q Valente versus UNUM?
 9 A Dentist with tendonitis of the hand,
 10 disabled, disputing -- well, the insurance company
 11 was disputing her disability. So it was a
 12 long-term disability claim.
 13 Q What happened in that case?
 14 A Decision for plaintiff. Went to trial. I
 15 testified. They awarded her long-term disability.
 16 Q Wilhite versus ABM, Tony Freitas.
 17 A Don't remember.
 18 Q Hazel Williams.
 19 A I think that was an old one. Don't
 20 remember.
 21 Q Joseph Maloney, do you know Mr. Joseph
 22 Maloney?
 23 A Rings a bell, but I don't remember.
 24 Q Wilson versus Global, Robert Huntley.
 25 A A nasal cancer in a semiconductor,

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1 one of those is a workers' comp case.
 2 Are all the rest of those cases in which
 3 you've testified for a plaintiff or claimant?
 4 A (Witness examines document.)
 5 Let me correct my response. The Pena
 6 case is a workers' comp case. Donna Diaz is the
 7 attorney for Santa Clara County. So that was on
 8 behalf of the defendant. All the rest are on behalf
 9 of plaintiff.
 10 Q Are you familiar with the, for want of a
 11 better word, what's been called the Daubert
 12 process?
 13 A Yes.
 14 Q What is your understanding of how that
 15 works?
 16 A I actually discussed it to refresh my
 17 memory yesterday evening.
 18 Q With whom?
 19 A With the plaintiff counsel, just to go over
 20 and remind me what the Daubert criteria are.
 21 Q Is that in addition to the hour you spent
 22 with him otherwise?
 23 A No. That was as part of that hour.
 24 And I jotted down some notes. And I'd be
 25 happy to go grab them.

18 (Pages 69 to 72)



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<p>1 Q Probably ought to do that.</p> <p>2 A And we can --</p> <p>3 Q Yes.</p> <p>4 (Recess taken.)</p> <p>5 Q (BY MR. TUCKER) You brought a file</p> <p>6 folder back, Doctor?</p> <p>7 A Yeah. Good luck.</p> <p>8 Q This would be the file jacket for the file</p> <p>9 that you previously gave us?</p> <p>10 A Right.</p> <p>11 Q And these appear to be your handwritten</p> <p>12 notes.</p> <p>13 A Correct.</p> <p>14 Q And just so there's no misunderstanding</p> <p>15 about what they say, would you read those</p> <p>16 handwritten notes for us.</p> <p>17 A Sure. So let me go through --</p> <p>18 Q First of all, tell me why you wrote it</p> <p>19 down.</p> <p>20 A Oh, because I thought you might ask me.</p> <p>21 Q Well, that's a good answer, but it's a</p> <p>22 nonanswer.</p> <p>23 Why did you write it down?</p> <p>24 MR. WARD: I object. That's an</p> <p>25 appropriate answer. That's his answer.</p>	<p>1 from a court decision of some type, but I'm not</p> <p>2 exactly sure what that was. He didn't give it to</p> <p>3 me.</p> <p>4 Q What did you write down?</p> <p>5 A Well, four elements, plus a fifth issue.</p> <p>6 So let me just read to you my notes of those four</p> <p>7 elements.</p> <p>8 The first is acceptable to testing and has</p> <p>9 been tested.</p> <p>10 Q What does that mean?</p> <p>11 A That the opinion offered by the expert is</p> <p>12 acceptable to testing and has been tested.</p> <p>13 I then wrote some notes under each of</p> <p>14 these four elements, because in thinking about</p> <p>15 that and how that applies to the opinions that I</p> <p>16 offer about causation in a chemical exposure case,</p> <p>17 or in this case in particular, as a physician there</p> <p>18 are certain elements that come to mind for each of</p> <p>19 these. So my notes then reflect my thoughts</p> <p>20 about those elements.</p> <p>21 Q Yes.</p> <p>22 A And one is what differential diagnosis has</p> <p>23 been considered in a particular case. What is</p> <p>24 known about the toxicology of a particular</p> <p>25 chemical, and what is the likelihood that the</p>
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<p>1 MR. TUCKER: Okay. I object to his --</p> <p>2 MR. WARD: I object to the argumentative</p> <p>3 question.</p> <p>4 MR. TUCKER: I object to the answer as</p> <p>5 being nonresponsive.</p> <p>6 Q Why did you feel the need to write down</p> <p>7 what you've written on the file jacket?</p> <p>8 A Thinking you might ask me about Daubert</p> <p>9 and what it means.</p> <p>10 Q Where did you get the information that</p> <p>11 you wrote down on the file jacket?</p> <p>12 A Yesterday evening with plaintiff counsel.</p> <p>13 I asked what -- where are you-all, defense and</p> <p>14 plaintiff counsel, in this case. May I, if I will,</p> <p>15 explain? I will give you the answer, but by way of</p> <p>16 an explanation.</p> <p>17 Q Please.</p> <p>18 A Because I wanted to understand where</p> <p>19 the case was. And I understand that there's a</p> <p>20 Daubert motion, that the issue has to do with the</p> <p>21 Daubert rule.</p> <p>22 I then asked if I would -- to basically</p> <p>23 refresh my memory about what the central criteria</p> <p>24 or elements of the Daubert rule entail. Plaintiff</p> <p>25 counsel reviewed that for me, I believe reading</p>	<p>1 symptoms are produced in this case by arsine.</p> <p>2 And how as an occupational medicine expert would</p> <p>3 I arrive at that conclusion that it's -- that my</p> <p>4 opinion has been tested according to that Daubert</p> <p>5 criteria.</p> <p>6 So the second -- should I continue?</p> <p>7 Q Yes.</p> <p>8 A Okay. The second is has the expert</p> <p>9 opinion been peer reviewed, from whence is my</p> <p>10 opinion drawn, particularly, you know, from the</p> <p>11 scientific and medical peer-reviewed literature.</p> <p>12 The third is what is the known or</p> <p>13 potential rate of error associated with the</p> <p>14 methodology and the studies controlling the</p> <p>15 techniques of the operation.</p> <p>16 Q Is that something that plaintiffs' attorney</p> <p>17 told you, or is that what you wrote down?</p> <p>18 A That one reflects -- because it sounds --</p> <p>19 no harm intended -- to be rather legal, in legalese,</p> <p>20 I believe something that he read to me from a legal</p> <p>21 opinion or a legal standard.</p> <p>22 And then what I do is apply that legal</p> <p>23 interpretation or ruling to the elements that I</p> <p>24 consider in rendering an expert opinion as, you</p> <p>25 know, a physician or occupational environmental</p>

19 (Pages 73 to 76)



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<p style="text-align: right;">Page 77</p> <p>1 medicine expert. 2 So the factors I would consider is 3 temporality, biological effect, evidence from 4 laboratory tests, consideration of other causes, 5 and the known variability in the human response 6 to a given dose of a chemical. 7 And then the fourth Daubert criteria is 8 whether the expert opinion is accepted in the 9 scientific community. And the factor that I 10 consider there would be what does the literature 11 say, peer reviewed, opinions published by 12 authoritative medical organizations. That was -- 13 that was my note on that one. 14 So those are the four -- I also have 15 differential diagnosis on that one. I'm not sure 16 why I put that down. 17 And then the only other note on here is -- 18 and I don't know whether this is a Daubert 19 criteria or whether this was something cited in a 20 legal opinion somewhere, but there should be -- 21 and this is the note I have -- grounding in the 22 methods and procedures of science such that there 23 is actual knowledge rather than just some 24 subjective belief on the part of the expert. 25 So I was considering in my discussions</p>	<p style="text-align: right;">Page 79</p> <p>1 A The number? 2 Q Mm-hmm. 3 A Well, in my chapter I think I have 1.5 as 4 confirmatory. 5 Q 1.5 what? 6 A Do you want to give me my -- 7 Q Big book? 8 A -- big book or that article that I wrote. 9 Get the numbers right. I think you tabbed it. 10 MR. WARD: Yeah, I tabbed it where we 11 had it open. 12 THE WITNESS: Well, I write it as 1.5 13 percent. So I think you could either convert that 14 as grams per liter or, let's see, milligrams per -- 15 Q (BY MR. TUCKER) Earlier you said -- 16 used the -- we were talking about it, reading out 17 of the other book you talked about grams per 18 dekaliter. 19 Do you remember that earlier today? 20 A Yeah. That's why I wanted to check the 21 numbers. 22 Q So what are you referring to there? 23 A 1.5 percent, which is the same -- do you 24 want to give me the other chapter and we can get 25 the exact number out of there?</p>
<p style="text-align: right;">Page 78</p> <p>1 last night what is meant by the term "actual 2 knowledge," and I understand it to be more than 3 just a subjective decision that's not based on 4 review of any actual facts or circumstances of a 5 case. So it would basically preclude an expert 6 from rendering an opinion just based on his or her 7 historical experience but without any actual 8 knowledge of the circumstances of a given case. 9 So given that, the other note that I made 10 here that in this particular case regarding the 11 laboratory tests of the plasma hemoglobin that I 12 discussed in my reports, that there's some, I 13 think, pretty high odds that this would happen by 14 chance alone to five or six people among the 13 15 cases that I reviewed as well as several others 16 that I understand had elevated plasma 17 hemoglobins. So I wrote down here that there's 18 not likely to be other plausible explanations for 19 that and, you know, that I think would bear on the 20 issues of scientific procedures, you know, from a 21 statistical point of view, that might be relevant to 22 this Daubert issue. 23 So those were the notes that I took. 24 Q What is a plasma hemoglobin level that's 25 diagnostic for exposure to arsine?</p>	<p style="text-align: right;">Page 80</p> <p>1 Q This one? 2 A No. I think it's in the primary care -- 3 MS. SMITH: I think we dropped that a 4 while ago. So you'll have to dig. 5 Q (BY MR. TUCKER) I'm going to give you 6 back the original book there. 7 A Yeah. I have it the same here as 1.5 8 percent. So we just need to confirm that as a 9 percentage, and it's -- I think that would be grams 10 per liter, but I can double-check that to make 11 sure that the units are correct. 12 Q How would you double-check it? 13 A I could look it up in a laboratory manual 14 of some type. 15 Q Did you make any reference to it at all in 16 your text? Did you cite to any reference in your 17 text? 18 A I did. I cited the Fowler article, you 19 know, that's the New England Journal from 1974. 20 So we could check that. 21 There were a number of other references 22 that I brought with me that would have the units. 23 I don't want to give you an incorrect answer. 24 Q Let me hand you LaDou's book that the 25 chapter on arsine was written by your colleague.</p>

20 (Pages 77 to 80)



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1 Does that help refresh your recollection?
 2 A (Witness examines book.)
 3 Well, I'm looking to see whether -- yeah,
 4 okay.
 5 Good. It's grams per dekaliter. Thank
 6 you.
 7 Q You understand I'm not being critical,
 8 but it seems to me like in an emergency medicine
 9 text which you're probably trying to deal with
 10 emergencies, it would be better if the author were
 11 to say one and a half percent of what for the
 12 reader who's trying to become aware of a subject
 13 he's evaluating.
 14 Would you agree with that?
 15 A Well, I agree it would be better to put the
 16 units in there, because laboratories report it out
 17 in different units. So you're right.
 18 Q So if there's another edition, would you
 19 recommend to the editor that that be corrected in
 20 your article?
 21 A Yes. I would agree with you. Make it
 22 easier. Particularly since, as I say, labs report it
 23 out in different units. They all may not report it
 24 out as percent.
 25 Q As that chapter reports it, one and a half

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1 with Mr. Ward.
 2 Q Without interpreting your notes --
 3 A Maybe that's Mr. Stoops. I have no idea.
 4 Q Without interpreting your notes, would
 5 you just read your notes. I can't read your
 6 writing.
 7 A Very few people can.
 8 September 27th, 2004 -- and I'm going
 9 to -- I use some abbreviations here, but I am going
 10 to read the actual words for what the
 11 abbreviations mean.
 12 Is that okay?
 13 Q Sure.
 14 A Okay.
 15 Date of injury, July 11th, 2001.
 16 Toxicologist, Dr. Gad, 58 pounds arsine release,
 17 chronic exposure also, 192 clients, Port of
 18 Catoosa, most without hemolysis. Is there an
 19 injury without hemolysis? Deterioration in
 20 health, peripheral neuropathy, memory loss,
 21 chronic fatigue syndrome, kidney disease,
 22 suicides, skin eruptions, Rule 26.
 23 And that was a telephone call, and I have
 24 the phone number and I have, again, Keith Ward
 25 and Fred Weiss.

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1 percent in a vacuum really isn't much use to
 2 anyone?
 3 A It is if you understand --
 4 Q You had a problem with it?
 5 A I had a problem with it.
 6 Q And you're being presented as a
 7 \$500-an-hour expert. So how about the poor
 8 resident that gets the guy that walks in the
 9 emergency room?
 10 A Yeah, particularly after being awake for
 11 24 hours.
 12 Q I'm handing you what I think has been
 13 identified as your file; is that correct?
 14 MS. SMITH: Part of it.
 15 Q (BY MR. TUCKER) Part of your file.
 16 A Part of it.
 17 Q It does not include your billing records
 18 which I put some other place. This is part of the
 19 file. What I'd like you to do is sort through that
 20 and just tell me what that top page is.
 21 A Notes from telephone calls with Mr. Ward
 22 and Fred Weiss, and then the latter call was with
 23 Mr. Stoops.
 24 Q Who is Mr. Weiss?
 25 A I don't know. He was on the phone call

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1 And then the next is October 12th, 2004,
 2 a telephone call, Fred Stoops, about 20 minutes.
 3 Requested additional medical records. Will send
 4 disk.
 5 Q Is September 24th when you first got the
 6 assignment to take this case?
 7 A September 27th.
 8 Q 27th?
 9 A Yes, that's correct. That was the first
 10 telephone call I had asking if I would provide
 11 assistance.
 12 Q What's the next entry in your file?
 13 A I'm sorry, the next document?
 14 Q Right.
 15 A Is -- I'm putting these back in
 16 chronological order. Easier to follow.
 17 A letter from Richardson Stoops dated
 18 October 6, 2004.
 19 Q And the next item? I mean, how many
 20 pages is that letter?
 21 A One page.
 22 Q Next item?
 23 A A letter from Richardson Stoops dated
 24 October 12th, 2004, two pages.
 25 Next a two-page letter from Richardson

21 (Pages 81 to 84)



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<p style="text-align: right;">Page 85</p> <p>1 Stoops dated December 16th, 2004. 2 Next a one-page letter from Richardson 3 Stoops dated December 16th, 2004. 4 Next a four-page letter from Richardson 5 Stoops dated December 22nd, 2004. 6 Next a two-page letter from Richardson 7 Stoops dated May 9th, 2005. 8 Next is an April 30th, 2005 report from 9 myself to Mr. Stoops. 10 Next -- do you want me to continue? 11 Q Yes. 12 A Next are various documents that I 13 reviewed and that are also listed in my two reports 14 in this case. One is a one-page list entitled 15 "Ingram Versus Air Products, Clients with High 16 Plasma Hemoglobin." And stapled to that is a map 17 entitled "Location of Clients with High Plasma 18 Hemoglobin" with -- well, with many names. 19 Q Did you prepare that chart that's in your 20 left hand? 21 A No. That chart was prepared by someone 22 else and forwarded to me by Richardson Stoops. 23 Q Are the plasma hemoglobin levels set on 24 that chart? 25 A Yes.</p>	<p style="text-align: right;">Page 87</p> <p>1 Q And that varies by lab? 2 A Yes. 3 Q So what does that absolute number mean 4 to you? What are they reporting there? They're 5 reporting 27 -- for example, this gentleman right 6 here they're reporting Eugene King 101 something. 7 101 what? 8 A You mean what are the units? 9 Q Mm-hmm. Right. 10 A This chart does not tell us what the units 11 are. 12 Q Being a doctor and being a specialist in 13 occupational medicine, what would those units be? 14 A I'd have to go and look at the laboratory 15 tests. 16 Q Different laboratories report different 17 units different ways? 18 A They may. So we have to know what the 19 units of measurement are. 20 Q What is the standard way to report it? 21 A You mean from the lab? 22 Q Mm-hmm. 23 A I don't know what the standard way would 24 be, but we could look -- 25 Q What's the most common way you've seen</p>
<p style="text-align: right;">Page 86</p> <p>1 Q What does that chart report as high 2 plasma hemoglobin? What's their lower cutoff? 3 MR. WARD: Object to form of the 4 question. 5 THE WITNESS: They don't have the 6 normal range. They just have the absolute value. 7 Q (BY MR. TUCKER) And what is an 8 absolute value? 9 A I'm sorry. What are the absolute values? 10 Q What does that mean, absolute value? 11 A These are actually the plasma hemoglobin 12 counts, but the laboratory normal is not given in 13 this table. 14 Q So is there any way to compare what's on 15 that chart with the number that's in your text 16 article of 1.5 grams per dekaliter? Without doing 17 the calculation, do you just know right off the top 18 of your head by looking at those numbers? 19 A Can I have my original report, because 20 the laboratory ranges are given by the lab. 21 Q You're looking at that? 22 A Yes. 23 Q Can you tell from that? 24 A Well, you have to know the upper limit of 25 the lab normal.</p>	<p style="text-align: right;">Page 88</p> <p>1 it? 2 A It's the way it's reported here. 3 Q Well, let me ask the question another 4 way. 5 A It's not a mystery. We could go look at 6 the medical records and tell you what the probable 7 units are. 8 Q I'm asking a doctor question. This is a 9 doctor question. 10 The lab reports in this case are like lab 11 reports that you receive with absolute numbers in 12 the hundreds of cases that you look at every year, 13 right? 14 A Correct. 15 Q Is there any kind of a customary way of 16 reporting absolute values for plasma hemoglobin? 17 A You would report it in some value relating 18 to milligrams or grams over a unit of volume. 19 Q And so it would depend on what -- 20 whether they were reporting in grams or 21 milligrams, right? 22 A Correct. 23 Q And whether they were reporting in 24 dekaliters or milliliters? 25 A Or liters.</p>

22 (Pages 85 to 88)



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<p style="text-align: right;">Page 89</p> <p>1 Q Or liters?</p> <p>2 A Yes.</p> <p>3 Q You've highlighted four people on that</p> <p>4 list.</p> <p>5 Why are those four highlighted?</p> <p>6 A I don't know. I didn't do the</p> <p>7 highlighting. That came to me highlighted.</p> <p>8 Q What else is in your file that -- that little</p> <p>9 part of the file I've given you so far?</p> <p>10 A A one-page document entitled "Key to</p> <p>11 Location at Port of Catoosa on July 11, 2001."</p> <p>12 And that's stapled to a map showing the location</p> <p>13 at the Port of Catoosa on that date for 13 clients.</p> <p>14 Q Okay.</p> <p>15 A Next is a map that is entitled "All Client</p> <p>16 Locations on July 11, 2001."</p> <p>17 Q What's the difference in those two maps,</p> <p>18 this one and the one you just told me about?</p> <p>19 A The first map locates the 13 clients</p> <p>20 specifically --</p> <p>21 Q Okay.</p> <p>22 A -- by name. And the second map, I</p> <p>23 believe, locates other clients, but I don't have the</p> <p>24 key.</p> <p>25 Q Okay.</p>	<p style="text-align: right;">Page 91</p> <p>1 have to say which one.</p> <p>2 Q (BY MR. TUCKER) When you send your</p> <p>3 patients that come to see you for blood work, how</p> <p>4 is it reported?</p> <p>5 A I think we're getting it back in grams per</p> <p>6 either deciliter or liter. I have to double-check.</p> <p>7 I've been doing this for 25 years, but if you tell</p> <p>8 me what the hemoglobin is, it's expressed</p> <p>9 uniformly over the country. If you tell me the</p> <p>10 hemoglobin is 16.7, it would be in uniform units</p> <p>11 in every lab, but I don't -- and I think it's in</p> <p>12 grams either per deciliter or liters.</p> <p>13 Q Okay.</p> <p>14 A The next map is entitled "Locations of</p> <p>15 Clients with Hematuria," and it's attached to a</p> <p>16 one-page chart entitled "Ingram Versus Air</p> <p>17 Products, Clients with Hematuria or Blood in</p> <p>18 Urine."</p> <p>19 Q Okay.</p> <p>20 A And then there is a ten-page stapled</p> <p>21 document. It's untitled and undated, but I</p> <p>22 recognize it as a printout of a Medline or PubMed</p> <p>23 search that I performed.</p> <p>24 Q What is it?</p> <p>25 A There are articles, many with attached</p>
<p style="text-align: right;">Page 90</p> <p>1 A Then there's another document that is</p> <p>2 entitled "Ingram Versus Air Products, Clients with</p> <p>3 High Hemoglobin," and that's attached to a map.</p> <p>4 Q Is that a different chart than the one you</p> <p>5 had before?</p> <p>6 A Yes. The chart we discussed earlier was</p> <p>7 clients with high plasma hemoglobin. These are</p> <p>8 high hemoglobin counts.</p> <p>9 Q And how are those expressed?</p> <p>10 A In the chart or typically?</p> <p>11 Q How are --</p> <p>12 A In the chart they're just expressed as</p> <p>13 numbers, but without a unit of measurement.</p> <p>14 Q How are they typically expressed? What</p> <p>15 unit of measurement?</p> <p>16 A It's expressed typically in grams.</p> <p>17 Q What's typical, though, here in</p> <p>18 California? What's typically done here in San</p> <p>19 Francisco? What's typically done at your</p> <p>20 university?</p> <p>21 MR. WARD: Object to the compound</p> <p>22 nature of the yes.</p> <p>23 MR. TUCKER: I'm trying to narrow it</p> <p>24 down.</p> <p>25 MR. WARD: Which one do you want? You</p>	<p style="text-align: right;">Page 92</p> <p>1 abstracts regarding arsine exposure and toxicity.</p> <p>2 Q Did you cite all of those in your report?</p> <p>3 A I don't remember.</p> <p>4 Q That's the last item?</p> <p>5 A Yes.</p> <p>6 (Proceedings interrupted.)</p> <p>7 Q (BY MR. TUCKER) Just reminding you of</p> <p>8 your appointment?</p> <p>9 A No. Someone else. Thanks.</p> <p>10 Q Can you date that?</p> <p>11 A Sometime prior to the preparation of my</p> <p>12 first report which I think is dated December of</p> <p>13 2004. So it would be sometime in December.</p> <p>14 Q How long did it take you to write your</p> <p>15 report?</p> <p>16 A The hours are reflected in my bill.</p> <p>17 Q I'm handing you four sheets of paper. I'll</p> <p>18 ask you to tell me if those represent all your bills</p> <p>19 in this case to date.</p> <p>20 A Yes.</p> <p>21 Q And do you have any time records more</p> <p>22 detailed than the records that are contained on</p> <p>23 those four pieces of paper?</p> <p>24 A No.</p> <p>25 Q How do you know that you spent two</p>

23 (Pages 89 to 92)



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1 hours, three hours or four hours on a given topic?
 2 A I keep track of the time.
 3 Q What do you do with the track you keep?
 4 A In the basket.
 5 Q You gave me a thumbs down, which means
 6 you throw them away?
 7 A I throw them away.
 8 Q How many times have you testified in
 9 federal court?
 10 A I don't know. I've testified in court about
 11 ten times.
 12 Q That's live in court?
 13 A Live in court. I don't know how many of
 14 those were in federal court.
 15 Q How many times have you testified
 16 outside of San Francisco in court?
 17 A Not many. I would say no more than five.
 18 Q That's through your entire 20-year career
 19 of handling matters like this?
 20 A Yes.
 21 Q So you have testified in five trials in
 22 California and five trials outside California,
 23 approximately?
 24 A I would say that's approximate, but to be
 25 honest with you, my memory is not great. I don't

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1 tendonitis of the hand.
 2 Q That's the disability insurance policy?
 3 A The disability insurance policy claim.
 4 Q Once again, the insurance company
 5 wouldn't pay. I understand. Got that one.
 6 What's the other one?
 7 A The lady with the high blood lead, and
 8 the IBM case.
 9 Q I've forgotten, where was the high blood
 10 lead case?
 11 A It was in San Francisco. I'm not sure in
 12 what court.
 13 Q And then the IBM case was here in San
 14 Francisco?
 15 A San Jose.
 16 Q How many times have you prepared a --
 17 do you understand this report that you filed here
 18 is kind of referred to as a Rule 26 report?
 19 A Yes.
 20 Q How many times have you drafted a Rule
 21 26 report for submission?
 22 A Not a huge number. Several. Less than
 23 five. The last one that comes to mind -- you know,
 24 I don't remember, but the last one that came to
 25 mind -- well, the last one I did, I looked at to

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1 keep track. I mean, my memory is very good when
 2 it comes to picking up my daughter after school
 3 and important matters, but I don't keep a really
 4 careful accounting in any form of trial testimony.
 5 Q When is the last time you testified live?
 6 MR. WARD: At a trial?
 7 MR. TUCKER: At a trial.
 8 MR. WARD: Or a deposition?
 9 MR. TUCKER: At a trial.
 10 MR. WARD: Does a person ever testify
 11 not alive?
 12 MR. TUCKER: A video deposition.
 13 MR. WARD: But the person is not alive
 14 when they give that?
 15 Is your question when is the last time you
 16 testified at a trial?
 17 MR. TUCKER: That's fine.
 18 MR. WARD: Okay.
 19 THE WITNESS: The most -- the three
 20 most recent trial testimonies, and I'm not sure
 21 what order these were in, were the Valente case on
 22 the disability, and the dentist.
 23 Q (BY MR. TUCKER) What happened to the
 24 dentist?
 25 A You know, she's the one that had the

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1 remind me what the format was that I used for a
 2 Rule 26 report when I prepared this one.
 3 Q Yes.
 4 A But I can't remember now what case I
 5 took a look at.
 6 Q What was it about?
 7 A If I could remember what it was about, I'd
 8 remember the name.
 9 Q You don't have to do it now, but I'd like
 10 you overnight, if you would, to get us a copy of
 11 the report you looked at to refresh your
 12 recollection as to how to do a report.
 13 A I'd be happy to. I am not sure I'm going
 14 to be able to remember it between now and tonight
 15 any better than I am now.
 16 Q How did you find it when you wanted to
 17 look at it?
 18 A I remembered it in December when I did
 19 this Rule 26 report.
 20 Do you want to give me the list of cases
 21 again? Maybe it will jog my memory.
 22 Q Mm-hmm.
 23 A (Witness examines document.)
 24 Would Rule 26 reports be required in
 25 railroad cases?

24 (Pages 93 to 96)



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1 Q I don't know.
 2 Are they in federal court?
 3 A I don't know.
 4 I don't think I -- I am not trying to keep
 5 something from you. I just simply cannot
 6 remember now. I remembered in December, and
 7 maybe it was because I had recently worked on it
 8 and prepared a Rule 26 report, so I said, uh-huh,
 9 let me make sure I get the format right.
 10 Q Would that be for a case in which you
 11 have not yet testified?
 12 A It could be.
 13 Q Are there cases that you have that are
 14 not workers' comp cases in which you may or may
 15 not testify, you don't know yet?
 16 A There are; and, I mean, there may be
 17 some other cases that I'm working on aside from
 18 the ones that I mentioned to you. It depends how
 19 comprehensive a list. It's going to take me some
 20 time to recreate that all for you, of cases that I
 21 haven't testified but I may have been contacted
 22 and somebody has said, will you take a look at
 23 this case.
 24 Q Well, how many cases do you have right
 25 now in your shop that are not workers' comp but

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1 A But if they've been filed and they're
 2 sitting on my shelf right outside my office door
 3 here, the only way I'm going to be able to really
 4 get to those to give you an absolute accurate list,
 5 maybe it's eight as opposed to the three that are
 6 on my living room floor, I'm going to have to stand
 7 there, and I'm going to have to pull those charts.
 8 I'm not sure that you're interested in that.
 9 Q Let's don't do that.
 10 A Okay.
 11 Q Has a court ever disallowed your
 12 testimony as an expert?
 13 A Well, let me ask you what disallowed
 14 means. Because the only time that I ever heard
 15 that that happened -- and I don't know whether it
 16 was disallowed or exactly what the ruling was --
 17 was years ago in a case involving Apple Computer.
 18 It was called Brust, B-r-u-s-t. And the defendant
 19 was Apple, and I don't remember the attorney.
 20 And it involved tendonitis in a woman that was
 21 using the mouse repetitively, and she sued Apple.
 22 And the judge ruled in some fashion that my
 23 testimony could not move forward, and I'm not
 24 sure whether he dismissed the case completely or
 25 he just restricted my testimony, but you could

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1 that you've been asked to take a look at for a
 2 claim?
 3 A A few. I could tell you the ones that are
 4 sitting on my living room floor between --
 5 Q How many are there?
 6 A Too many. But they're almost all
 7 workers' compensation cases that you're not
 8 interested in, or at least I don't think you're
 9 interested in, because they're disability exams
 10 that I have to take home to dictate that I can't
 11 finish in my office. But I think you're asking
 12 about other kinds of cases that are not workers'
 13 comp cases for the State of California. And there
 14 are probably a few sitting on my living room floor
 15 for me to look at. I could tell you those between
 16 now and tomorrow.
 17 Q Do you have a rough count as to how
 18 many cases that you've got that you've accepted
 19 responsibility to look at as an expert that are in
 20 your office or in your practice right now that are
 21 not comp cases? I mean, is it ten? 20? 30? 40?
 22 A Oh, no. It's less than five. There aren't
 23 very many. And if you want, I can tell you what
 24 those are in a quick way.
 25 Q Okay.

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1 look that one up, because I remember it made a
 2 local, you know, daily or weekly legal paper.
 3 Q Why was your testimony disallowed?
 4 A Well, as I understand it, the burden of
 5 proof in terms of -- or the argument that had to be
 6 made was was there literature that specifically
 7 showed that a computer mouse causes tendonitis
 8 of the wrists.
 9 And this was about, I don't know, 10 or
 10 12 years ago, and there were plenty of studies
 11 that showed that if you did tasks that are similar
 12 to the use of a computer mouse, you could get
 13 tendonitis of the wrists, but there were no specific
 14 studies that at least at that time convinced the
 15 judge that the use of a computer mouse caused
 16 wrist tendonitis.
 17 Q So it's your belief that your testimony
 18 was disallowed because there was no specific
 19 literature that showed that there had been testing
 20 to confirm that the mouse causes tendonitis?
 21 A Well, yeah, I'm just guessing. I never
 22 read the court opinion.
 23 Q Were you ever given a copy of the opinion
 24 to look at?
 25 A No.

25 (Pages 97 to 100)



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<p>1 Q The order?</p> <p>2 A No. I'm just guessing. I would guess</p> <p>3 that perhaps the judge ruled that there wasn't</p> <p>4 sufficient peer-reviewed literature or it hadn't</p> <p>5 been sufficiently tested, or applied some other of</p> <p>6 the Daubert standard to that case.</p> <p>7 Q Has that happened to you in any other</p> <p>8 case?</p> <p>9 A Not to my knowledge.</p> <p>10 Q How about the case of Casey versus Ohio</p> <p>11 Medical?</p> <p>12 A I don't remember.</p> <p>13 Q You don't recall anything about the case?</p> <p>14 A No.</p> <p>15 Q How did you find out that your testimony</p> <p>16 was disallowed or disqualified in Brust versus</p> <p>17 Apple?</p> <p>18 A The lawyer told me, the plaintiff attorney</p> <p>19 told me.</p> <p>20 Q But he didn't offer to give you the order?</p> <p>21 A No. He may have offered it to me. I don't</p> <p>22 remember whether I asked for it. I remember</p> <p>23 reading about it because I was in a law office like</p> <p>24 the next week for something else, and the attorney</p> <p>25 said, oh, you know, you were written up in the</p>	<p>1 MR. TUCKER: This is a logical time to</p> <p>2 break.</p> <p>3 (The deposition proceedings adjourned at</p> <p>4 12:02 p.m.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
Page 102	Page 104
<p>1 local press.</p> <p>2 It was at a time, as I remember, there</p> <p>3 were a lot of lawsuits filed against IBM and Apple</p> <p>4 on their keyboard and mice. I don't think very</p> <p>5 many of them went forward, from what I can</p> <p>6 remember.</p> <p>7 Q When you were talking about Daubert</p> <p>8 with Mr. Ward yesterday, did you mention that</p> <p>9 case?</p> <p>10 A Yes, oh, yeah. The discussion came up as</p> <p>11 to whether I had, you know, been -- I don't know</p> <p>12 what the verb is, but Dauberted out or however</p> <p>13 you might call this, and I said, yeah, that's the</p> <p>14 only one that I'm aware of, was the Brust case.</p> <p>15 But, you know, you suggest I guess by</p> <p>16 asking me the questions that there might have</p> <p>17 been another one, but I don't -- the vast majority</p> <p>18 of cases I have no idea what happens.</p> <p>19 Can we take a time check, because I don't</p> <p>20 know whether you're about to --</p> <p>21 MR. TUCKER: My watch says 12:01, but</p> <p>22 I set my watch a little fast.</p> <p>23 THE WITNESS: It's about 12 o'clock.</p> <p>24 And if this is a logical time to break, I was going</p> <p>25 to suggest that.</p>	<p>1 STATE OF CALIFORNIA)</p> <p>2) ss</p> <p>3 COUNTY OF SAN MATEO)</p> <p>4 I hereby certify that the witness in the</p> <p>5 foregoing deposition, ROBERT JAY HARRISON,</p> <p>6 M.D., M.P.H., was by me duly sworn to testify to</p> <p>7 the truth, the whole truth and nothing but the</p> <p>8 truth, in the within-entitled cause; that said</p> <p>9 deposition was taken at the time and place herein</p> <p>10 named; that the deposition is a true record of the</p> <p>11 witness's testimony as reported by me, a duly</p> <p>12 certified shorthand reporter and a disinterested</p> <p>13 person, and was thereafter transcribed into</p> <p>14 typewriting by computer.</p> <p>15 I further certify that I am not interested in</p> <p>16 the outcome of the said action, nor connected</p> <p>17 with, nor related to any of the parties in said</p> <p>18 action, nor to their respective counsel.</p> <p>19 IN WITNESS WHEREOF, I have hereunto set</p> <p>20 my hand this 29th day of June, 2005.</p> <p>21</p> <p>22</p> <p>23</p> <p>24 <u>CARYE C. TORRES, CSR #10685</u></p> <p>25 STATE OF CALIFORNIA</p>

26 (Pages 101 to 104)



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1 IN THE DISTRICT COURT IN AND FOR RODGERS COUNTY
2 STATE OF OKLAHOMA

3 DOUG INGRAM, et al.,)
4 Plaintiffs,)

5 v.) CASE NO. CJ-2001-438
6)

7 AIR PRODUCTS AND CHEMICALS,)
8 INC., a Delaware Corporation;)
9 SOLKATRONICS CHEMICAL, INC.,)
10 a Delaware Corporation; JARRAD)
11 GARRISON, an individual,)

12)
13 Defendants.)

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<p style="text-align: right;">Page 109</p> <p>1 toxicology for purposes of setting regulation</p> <p>2 standards, thresholds for exposure in the</p> <p>3 environmental workplace.</p> <p>4 Q What does the acronym NOAEL stand for?</p> <p>5 A No observed effect level. And I don't</p> <p>6 know what the "A" stands for.</p> <p>7 Q Do you know what the no observed effect</p> <p>8 level is for arsine gas?</p> <p>9 A Yes.</p> <p>10 Q What is it?</p> <p>11 A I need to reference my file.</p> <p>12 MS. SMITH: What part of your file do</p> <p>13 you want?</p> <p>14 MR. TUCKER: Would you like to walk</p> <p>15 around and take a second and look at it?</p> <p>16 THE WITNESS: (Examines documents.)</p> <p>17 Q (BY MR. TUCKER) For the record would</p> <p>18 you tell me what document you're reviewing,</p> <p>19 Doctor.</p> <p>20 A Yeah. Just a second, I will.</p> <p>21 I'm reviewing a document from the</p> <p>22 California Environmental Protection Agency Office</p> <p>23 of Environmental Health Hazard Assessment --</p> <p>24 also goes by the acronym OEHHHA or "OEHHHA", so if</p> <p>25 I use the word, that's what I'm referring to. It's</p>	<p style="text-align: right;">Page 111</p> <p>1 Your question is incorrect in that an</p> <p>2 NOEL is not a regulatory level per se. So</p> <p>3 regulatory agencies don't adopt an NOEL.</p> <p>4 Regulatory agencies use an NOEL from the</p> <p>5 literature to then set other kinds of regulatory</p> <p>6 levels.</p> <p>7 Q Is the number which you gave me, 5 parts</p> <p>8 per million, the recognized no observable effect</p> <p>9 level for arsine gas?</p> <p>10 MR. WARD: Object to the form.</p> <p>11 THE WITNESS: It's used by the</p> <p>12 California Environmental Protection Agency as the</p> <p>13 NOEL for arsine gas based on acute toxicity using</p> <p>14 hematocrit as the end point. So that has been</p> <p>15 used by the State of California to set a reference</p> <p>16 level which is much lower that incorporates a</p> <p>17 number of other factors.</p> <p>18 Q (BY MR. TUCKER) Builds in a safety</p> <p>19 factor, doesn't it?</p> <p>20 A Builds in a factor to protect humans from</p> <p>21 toxicity due to arsine gas.</p> <p>22 Q But I just want to make clear that we're</p> <p>23 all on the same page, that five parts per million</p> <p>24 for the one-hour animal is accepted, it is the</p> <p>25 accepted no observable effect level of arsine gas;</p>
<p style="text-align: right;">Page 110</p> <p>1 dated March of 1999, and it's an acute toxicity</p> <p>2 summary for arsine. The no observed effect level is</p> <p>3 5 parts per million, and that's based on an animal</p> <p>4 study of one-hour exposure with reduction in</p> <p>5 hematocrit as the end point.</p> <p>6 Q And is reduction in hematocrit one of the</p> <p>7 indicators of red blood cell destruction?</p> <p>8 A Yes.</p> <p>9 Q Or hemolysis?</p> <p>10 A Yes.</p> <p>11 Q Is that an example of regulatory</p> <p>12 toxicology?</p> <p>13 A Yes.</p> <p>14 Q Is that a standard that's observed here in</p> <p>15 California?</p> <p>16 A Which standard are you referring to?</p> <p>17 Q The one you --</p> <p>18 A NOEL?</p> <p>19 Q Yes, uh-huh.</p> <p>20 A This particular document is a standard --</p> <p>21 this particular document is used in California to</p> <p>22 set what's called an acute reference level.</p> <p>23 Q Who set the NOAEL, the no observed</p> <p>24 effect level? What regulatory agency set it?</p> <p>25 A (Witness examines document.)</p>	<p style="text-align: right;">Page 112</p> <p>1 is that right? Did somebody else say 15 parts per,</p> <p>2 or 4 parts per million? Do you understand my</p> <p>3 question?</p> <p>4 MR. WARD: Object. You can't ask two</p> <p>5 questions. You have to let him answer one.</p> <p>6 Q (BY MR. TUCKER) Is my question more</p> <p>7 clear?</p> <p>8 A I was going to ask you to clarify what you</p> <p>9 meant by the word "accepted."</p> <p>10 It is correct that 5 parts per million is</p> <p>11 used as the NOEL by the State of California</p> <p>12 Environmental Protection Agency Office of</p> <p>13 Environmental Health Hazard Assessment; and</p> <p>14 that in turn is then used as the basis to set a</p> <p>15 reference exposure level for arsine in air and</p> <p>16 water.</p> <p>17 Q And all I want to know is does New York</p> <p>18 have 15 parts per million and Texas 6 parts per</p> <p>19 million, or is 5 pretty much the nationwide</p> <p>20 number that's used?</p> <p>21 A I don't know. I don't know what other</p> <p>22 states or other regulatory agencies use.</p> <p>23 Q What about the United States</p> <p>24 Environmental Protection Agency?</p> <p>25 A I don't know.</p>

2 (Pages 109 to 112)



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1 Q What is IDLH?
 2 A Immediately -- remind me what the "D" is.
 3 Immediately something to life and health.
 4 Q Dangerous?
 5 A Thank you.
 6 Q What is the IDLH for arsine gas?
 7 A (Witness examines documents.)
 8 Q Again, as you answer, if you'd say what
 9 you're obtaining the information from.
 10 A (Witness nods head.)
 11 3 parts per million. And that's based on
 12 documentation from the National Institute for
 13 Occupational Safety and Health, available through
 14 their Web site.
 15 Q Is that called NIOSH?
 16 A Correct.
 17 Q Who is NIOSH? I know you gave me the
 18 name, but is that a government agency, a private
 19 agency?
 20 A Government agency.
 21 Q Federal government?
 22 A Correct.
 23 Q What does MLD stand for?
 24 A Maximum lethal dose.
 25 Q Is there a difference between mean lethal

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1 intervals before you gave me the answer; is that
 2 correct?
 3 A No.
 4 Q What is the TLD for arsine?
 5 A The TLD for arsine is 0.05 parts per
 6 million.
 7 Q What information did you review to
 8 determine the amount of arsine gas that escaped
 9 in the accident on July 11th?
 10 A The quantity?
 11 Q Yes.
 12 A The materials outlined in my initial
 13 report. Would you like me to refer to that?
 14 Q You can look at your report if you want
 15 to.
 16 Do you remember what you read to learn
 17 about it, generally speaking?
 18 A (Witness examines documents.)
 19 Can we go off the record for a second,
 20 please?
 21 MR. TUCKER: Sure.
 22 (Discussion off the record.)
 23 THE WITNESS: (Examines documents.)
 24 There was an investigation of the July
 25 11th, 2001 arsine incident prepared by Eugene

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1 and maximum lethal?
 2 A I don't know.
 3 Q What is the MLD of arsine?
 4 A (Witness examines documents.)
 5 Let me read to you from a document from
 6 NIOSH entitled "Current Intelligence Bulletin for
 7 Arsine" dated August 3rd, 1979. It states -- and
 8 I'll quote -- "The mean lethal dose is unknown for
 9 man, but in small mammals it is about 0.5
 10 milligrams per kilogram body weight. Inhalation
 11 of 250 parts per million of arsine gas is instantly
 12 lethal. Exposures of 25 to 50 parts per million for
 13 one-half hour are lethal, and 10 parts per million
 14 is lethal after longer exposures."
 15 Q What does TLD stand for?
 16 A Threshold limit value.
 17 Q Do you know the threshold limit value for
 18 arsine?
 19 I might -- for the record, Doctor, let me
 20 ask you, each time I've asked you one of these
 21 questions, have you known the answer without
 22 referring to your reference materials?
 23 A Yes.
 24 Q But you've always referred to your
 25 reference materials, and there have been some

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1 Ngai of Air Products.
 2 Q (BY MR. TUCKER) Is that where you got
 3 the information about the event?
 4 A That's one of the places. There may have
 5 been others, but that was the primary report.
 6 Q What was your understanding of the
 7 manner in which the release occurred? Not the
 8 physical incident as to say what part failed to
 9 cause the accident, but what happened when the
 10 accident occurred as far as the release of the
 11 arsine is concerned?
 12 A Arsine was released from a cylinder.
 13 Q How did it escape? Is what -- in what
 14 manner did it escape?
 15 A I don't quite understand your question.
 16 It was released into the air from the cylinder.
 17 Q I'm not asking a very good question.
 18 That's a good example of when I want you to tell
 19 me I'm not, okay?
 20 Did it release instantaneously?
 21 A It released over a period of time.
 22 Q Do you know what period of time?
 23 A I do. I'd have to look in the report to
 24 look at the exact period of time, but it was
 25 roughly, I believe, over about an hour.

3 (Pages 113 to 116)



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<p style="text-align: right;">Page 117</p> <p>1 Q Were you originally retained in this case</p> <p>2 by telephone?</p> <p>3 A I was originally contacted by telephone,</p> <p>4 that's correct.</p> <p>5 Q And at the time what were you told about</p> <p>6 the case?</p> <p>7 A It's reflected in the little page of notes</p> <p>8 that I read to you yesterday, but basically, that</p> <p>9 there was 58 pounds of arsine that was released</p> <p>10 from the Solkatronics plant on July 11th, 2001.</p> <p>11 There was 192 clients. They had been seen in</p> <p>12 various emergency departments. There was</p> <p>13 evidence of hemolysis. And I was asked if I could</p> <p>14 provide expert consultation as to whether there</p> <p>15 was an injury to these clients that occurred as a</p> <p>16 result of the release of arsine gas.</p> <p>17 Q Was the fact that you were told there was</p> <p>18 evidence of hemolysis of importance to you in</p> <p>19 considering whether to accept this position and</p> <p>20 this assignment?</p> <p>21 A No.</p> <p>22 Q If there had been no evidence of</p> <p>23 hemolysis, would you have still accepted the</p> <p>24 assignment?</p> <p>25 A Yes.</p>	<p style="text-align: right;">Page 119</p> <p>1 Q Did you request any particular materials</p> <p>2 from plaintiffs' attorneys to assist you in making</p> <p>3 your evaluation?</p> <p>4 A Their medical records.</p> <p>5 Q When you say "Their medical records,"</p> <p>6 you mean the records of the individuals about</p> <p>7 whom you were being asked to consider giving an</p> <p>8 opinion?</p> <p>9 A Correct.</p> <p>10 Q And did you receive those records?</p> <p>11 A Yes.</p> <p>12 Q In what form did they arrive?</p> <p>13 A On a few of the individuals hard copies</p> <p>14 of their records came, because they were not</p> <p>15 included on a CD-ROM. The vast majority came on</p> <p>16 I think it was two or three CD-ROMs.</p> <p>17 Q When you say, "Their medical records,"</p> <p>18 could you tell me without obviously going through</p> <p>19 each individual person that you were asked to</p> <p>20 review the general nature of the records that you</p> <p>21 received. And by the general nature I mean the</p> <p>22 time span that they covered.</p> <p>23 A The medical records generally covered the</p> <p>24 date of the incident or the few days after the July</p> <p>25 11th, 2001 incident and follow-up medical</p>
<p style="text-align: right;">Page 118</p> <p>1 Q If there had been no evidence of</p> <p>2 hemolysis, would you have expected to find that</p> <p>3 there was exposure to arsine gas?</p> <p>4 A Would you say that again, please.</p> <p>5 Q If there were no indication of hemolysis,</p> <p>6 would you have expected to find, had you</p> <p>7 completed your analysis, that there was exposure</p> <p>8 to arsine gas?</p> <p>9 MR. WARD: Object to form.</p> <p>10 THE WITNESS: There could still -- there</p> <p>11 still could be exposure to arsine gas.</p> <p>12 Q (BY MR. TUCKER) But just not at a level</p> <p>13 to cause hemolysis?</p> <p>14 A That's correct.</p> <p>15 Q Okay.</p> <p>16 A So the exposure question is separate from</p> <p>17 the health effects question. These individuals can</p> <p>18 be or could have been exposed to arsine gas</p> <p>19 hypothetically without evidence of hemolysis.</p> <p>20 Q And could they hypothetically have health</p> <p>21 effects without evidence of hemolysis?</p> <p>22 A The individuals could have psychological</p> <p>23 effects as a result of the exposure, but I doubt</p> <p>24 whether they could have physical effects without</p> <p>25 evidence of hemolysis.</p>	<p style="text-align: right;">Page 120</p> <p>1 examinations. On some of the individuals there</p> <p>2 were medical records prior to the July 11th, 2001</p> <p>3 date. I don't believe that there were</p> <p>4 comprehensive medical records on all of them;</p> <p>5 but, generally speaking, I was satisfied that there</p> <p>6 was medical records that gave me enough</p> <p>7 information to determine whether or not there</p> <p>8 were preexisting problems.</p> <p>9 Q Did you request anything that you did not</p> <p>10 receive?</p> <p>11 A I asked plaintiff counsel if there were</p> <p>12 documents that created an exposure scenario with</p> <p>13 isopleths or gradients of exposure following the</p> <p>14 release on July 11th, 2001, whether any expert</p> <p>15 or governmental organization had done a</p> <p>16 quantitative dose reconstruction using</p> <p>17 meteorological data to give me an idea about</p> <p>18 whether -- or to give me an idea about the arsine</p> <p>19 concentrations at various distances and directions</p> <p>20 from the point of release.</p> <p>21 Q Did you receive any information about</p> <p>22 meteorological conditions, or did you discover or</p> <p>23 discern that in reviewing the materials that were</p> <p>24 provided to you?</p> <p>25 A Everything I have is in the materials that</p>

4 (Pages 117 to 120)



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1 are provided to me that I've listed in my reports.
 2 There may be some information here and there
 3 about the wind conditions and the direction, but
 4 there's no quantitative dose reconstruction.
 5 Q Do you have any memory of what the wind
 6 conditions were?
 7 A No independent memory.
 8 Q Do you have any independent memory of
 9 the temperature conditions?
 10 A No.
 11 Q When you're doing a differential diagnosis
 12 of someone who's presenting with fatigue and
 13 headache, is it important as a part of differential
 14 diagnosis to determine the environment they've
 15 been in before they presented?
 16 A Could you clarify what you mean by
 17 environment.
 18 Q Well, if it's a hundred degrees and bright
 19 sunshine and you're standing out in the sun
 20 without any water, would that be a factor you
 21 would want to consider as a physician in making a
 22 differential diagnosis of a person who's
 23 complaining of a headache or nausea, for example?
 24 MR. WARD: Object to the form.
 25 Q (BY MR. TUCKER) If they just spent the

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1 What evidence of hemolysis, that is to
 2 say, what extent of hemolysis would be considered
 3 evidence of hemolysis? Can you give me a level?
 4 A As I pointed out in my report, I consider
 5 the plasma for hemoglobin above the expected
 6 normal range evidence of hemolysis. There may
 7 also be a drop in hemoglobin or hematocrit,
 8 hemoglobinuria or hemoglobin in the urine.
 9 Q Let me interrupt you.
 10 Do you mean any number plasma free
 11 hemoglobin over the laboratory reference value
 12 would be considered to be sufficient hemolysis for
 13 you to tie that to arsine?
 14 A Well, that's a slightly different
 15 question --
 16 Q Okay.
 17 A -- than the first question you asked.
 18 You just said what was the evidence of it, and
 19 it's --
 20 Q Answer the last one.
 21 A So ask the last question again.
 22 MR. TUCKER: Could you reask that.
 23 (Record read by the reporter as follows:
 24 "Q. Do you mean any number plasma free
 25 hemoglobin over the laboratory reference

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1 last two hours outdoors in hundred-plus-degree
 2 sun?
 3 MR. WARD: Object to the form.
 4 THE WITNESS: To the extent that I think
 5 that heat stress might be a cause of those
 6 symptoms, it would be important to know
 7 something about the temperature and humidity at
 8 that point in time.
 9 Q (BY MR. TUCKER) Because with that
 10 symptom that would be something you'd want to
 11 rule out as a part of a differential diagnosis, isn't
 12 it?
 13 A Possibly.
 14 Q That's what differential diagnosis is, is
 15 ruling in and ruling out, right?
 16 A That's the definition of differential
 17 diagnosis, that's correct.
 18 Q Those kind of symptoms could be caused
 19 by heat stress, couldn't they?
 20 A Which symptoms?
 21 Q For instance, headache and nausea.
 22 A Headache and nausea are symptoms that
 23 can possibly occur due to heat stress.
 24 Q Earlier we talked about evidence of
 25 hemolysis would be required.

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1 value would be considered to be sufficient
 2 hemolysis for you to tie that to arsine?")
 3 THE WITNESS: I do, I think, have to ask
 4 you to clarify the question. When you say tying it
 5 to arsine, can you clarify what you mean by that.
 6 In this particular case? In general? Are you
 7 asking --
 8 Q (BY MR. TUCKER) Is there a point
 9 beyond which you would say that a level I'm
 10 looking at in a plasma free hemoglobin test result
 11 is more than would be expected from an artifact,
 12 as we discussed yesterday, such as mishandling of
 13 the sample or misdrawing of the sample or injury
 14 to the tissue site or preexisting bruise to the
 15 area?
 16 MR. WARD: Object to the form.
 17 THE WITNESS: If I had one individual
 18 with an increase in their plasma free hemoglobin
 19 in the setting of an arsine gas exposure that
 20 involved many dozens of individuals and there was
 21 only one person, I would consider the possibility
 22 that that was an artifact due to the factors that
 23 you mentioned.
 24 But if there were several individuals who
 25 are treated in the context of a potential exposure

5 (Pages 121 to 124)



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<p style="text-align: right;">Page 125</p> <p>1 to arsine gas release and they all have elevated</p> <p>2 plasma free hemoglobin, I have to consider</p> <p>3 whether or not there's some sort of systematic</p> <p>4 artifactual error. Did they all have their blood</p> <p>5 drawn in a way that caused mechanical hemolysis,</p> <p>6 or is it more likely that it was actually due to</p> <p>7 arsine gas exposure.</p> <p>8 Q (BY MR. TUCKER) That's probably a</p> <p>9 good answer, but it's not really to the one I asked.</p> <p>10 The question I really wanted an answer to</p> <p>11 is with your one guy or your one person, is there a</p> <p>12 level of hemolysis reported, plasma free</p> <p>13 hemoglobin reported by a laboratory, is there a</p> <p>14 number at which you'll say, well, this is not an</p> <p>15 artifact, I rule out artifact and I say I look for</p> <p>16 something else?</p> <p>17 A Is there a level at which -- no, there's no</p> <p>18 level. Any level above the lab normal range, I</p> <p>19 would consider whether or not it's possibly due to</p> <p>20 an artifact or due to exposure.</p> <p>21 Q Let's go to your one person that had</p> <p>22 anarsine -- possibility of arsine exposure. Arsine</p> <p>23 was in the area and that person may have been</p> <p>24 exposed. And you get a laboratory reference value</p> <p>25 exceedance on the plasma free hemoglobin blood</p>	<p style="text-align: right;">Page 127</p> <p>1 Q Did you read this notebook marked</p> <p>2 "Arsine Incident, Catoosa, Oklahoma, July 11th,</p> <p>3 2001 Research Materials"?</p> <p>4 A Yes.</p> <p>5 Q From whom did you receive that?</p> <p>6 A Plaintiff counsel.</p> <p>7 Q Did you direct him to prepare that and</p> <p>8 tell him what to put in it?</p> <p>9 A No.</p> <p>10 Q This was material the plaintiffs' counsel</p> <p>11 obtained and forwarded to you?</p> <p>12 A Correct.</p> <p>13 Q Do you know where it came from?</p> <p>14 A No -- well, of course, yes, I know where it</p> <p>15 came from, as does anybody who reads the volume.</p> <p>16 It's all referenced. So one can look back and see</p> <p>17 what the original sources are.</p> <p>18 Q Let me --</p> <p>19 A I think what you mean is do I know why</p> <p>20 he sent me that particular information?</p> <p>21 Q Do you know who put together that</p> <p>22 compendium of information or selected it for it to</p> <p>23 come to you?</p> <p>24 A No.</p> <p>25 Q Would the footnoted references in your</p>
<p style="text-align: right;">Page 126</p> <p>1 report, okay? Is there a number of exceedance at</p> <p>2 which you would say, I clearly discard the concept</p> <p>3 of artifact and this man must have been exposed</p> <p>4 to arsine?</p> <p>5 A No, there's no number. Anything above</p> <p>6 the laboratory, the upper limit of the laboratory</p> <p>7 range I would consider in my differential diagnosis</p> <p>8 arsine gas exposure or artifact due to the blood</p> <p>9 draw.</p> <p>10 Q Other than questions about the gradients</p> <p>11 of exposure, was there anything else you</p> <p>12 requested that you did not receive?</p> <p>13 A No.</p> <p>14 Q Did you review anything outside of what</p> <p>15 was sent to you?</p> <p>16 A Other than the references that I attached</p> <p>17 to my report, no.</p> <p>18 Q Now, are the references that are attached</p> <p>19 to your report different than the references that</p> <p>20 are contained in these books in front of you,</p> <p>21 which are research materials, marked "Research</p> <p>22 Materials"?</p> <p>23 A Possibly. I haven't gone and done a</p> <p>24 side-by-side check. There's probably some</p> <p>25 overlap.</p>	<p style="text-align: right;">Page 128</p> <p>1 report constitute the complete independent</p> <p>2 research that you performed in this file?</p> <p>3 A I also looked at the materials that the</p> <p>4 plaintiff counsel sent me independently.</p> <p>5 Q Well, I see.</p> <p>6 A I would characterize that as independent</p> <p>7 research also.</p> <p>8 Q When I say independent research I mean</p> <p>9 research that was driven by you selecting what it</p> <p>10 was that was important for you to find and read.</p> <p>11 A I would include the volumes sent to me by</p> <p>12 plaintiff counsel. I would not characterize that as</p> <p>13 anything but independent research. I read</p> <p>14 through the materials and selected that which I</p> <p>15 considered important to me.</p> <p>16 Q And were the things that you attached as</p> <p>17 footnotes to your report the things that you</p> <p>18 considered important?</p> <p>19 A You mean the references?</p> <p>20 Q Yes.</p> <p>21 A Those are the references that I consider</p> <p>22 important from the medical literature that I</p> <p>23 reviewed. There also are other important</p> <p>24 documents that I reviewed that are listed in my</p> <p>25 report. So I incorporated all the materials that I</p>

6 (Pages 125 to 128)



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1 considered important that plaintiff counsel sent to
2 me as well as the literature that I attached to my
3 report.

4 Q I'm still a little puzzled about this blood
5 level thing we've talked about. I was thinking
6 back to what we read yesterday from your
7 colleague's book on the chapter on gases.

8 Do you recall that?

9 A Yes.

10 Q Do you recall he said the thing that
11 confirms the diagnosis of arsine exposure is
12 plasma free hemoglobin level of 1.5 grams per
13 dekaliter?

14 A Yes.

15 Q Would you agree with your colleague?

16 A Yes. As far as we have a common
17 understanding of what the word "confirms" means.

18 Q Of course. I have no idea what your
19 colleague meant when he put it in the book. I just
20 read it. That was his word, wasn't it, as I recall?

21 A I think the book -- I think the text stands
22 for itself. That's what it says. That's correct.

23 Q But do you agree with him? In the
24 medical sense, obviously, it has some medical
25 meaning or he wouldn't have put it in his text that

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1 or have an arsine effect on you?

2 A That's a good question, because it really
3 gets into at what level of intravascular hemolysis
4 would one expect to have either acute or
5 chronic effects from arsine exposure. And there's
6 probably a variability in response.

7 I think it is very difficult to find a point
8 or a number below which one would never expect
9 to find health effects from acute or chronic
10 exposure to arsine and a number above which one
11 would guarantee there would be long-term health
12 effects.

13 Generally speaking, the lower the
14 evidence -- the lower the number indicating
15 hemolysis, the less likely it would be the
16 long-term health effect; and the greater the
17 number, consequently, the greater the likelihood
18 we may expect to see long-term complications.

19 Q I agree with that theoretically, but when
20 you talk about a variable response, there still has
21 to be a lower limit to that variable response below
22 which you'd expect to see no response; isn't that
23 correct?

24 MR. WARD: Object to the form.

25 Q (BY MR. TUCKER) Isn't that correct?

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1 way. If you read that, as a physician reading a
2 fellow physician's work in the book that you have
3 a different chapter, do you agree with what he
4 wrote?

5 A I agree with what he wrote in terms of the
6 context and the way we understand what he wrote
7 and the desired intent for clinical management of
8 arsine toxicity, yes, I agree.

9 I just want to clarify that sentence is
10 intended to guide physicians for the acute
11 treatment of arsine toxicity.

12 Q If you had one gram per dekaliter, are
13 you saying you couldn't tell for sure, but there's a
14 good chance it's arsine?

15 A Yes.

16 Q Okay.

17 A It doesn't mean that you have to be above
18 that level to have arsine poisoning or have had
19 evidence of exposure to arsine. It's a number
20 that's meant to guide the physician in terms of
21 thinking about treatment for arsine poisoning.

22 Q Is there a difference between a number
23 that would indicate that you might have had
24 exposure to arsine and a number that would be
25 one that would, as you say, cause arsine poisoning

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1 A Well, there doesn't have to be. That's not
2 correct. And in the field of toxicology there are
3 many, many instances in which there is not a set
4 lower number.

5 Q When you have a situation where you
6 have a number of people making the same
7 complaint, believing that they had the same
8 exposure and believing they have the same kinds
9 of injuries, that sort of narrows that range down a
10 little bit, doesn't it?

11 MR. WARD: Object to the form.

12 Q (BY MR. TUCKER) Can't everybody be at
13 the very lowest range, can they?

14 A I don't understand your question.
15 Perhaps you can reframe it as a hypothetical.

16 Q I mean, it ceases to be an idiosyncratic
17 reaction when everybody has it.

18 A Are you giving me -- give me a
19 hypothetical.

20 Q Do you agree with that?

21 A Not without -- I'm sorry.

22 Q Does the reaction cease to be
23 idiosyncratic when everybody has the same
24 reaction?

25 A Depends on the dose. At a very high dose

7 (Pages 129 to 132)



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<p style="text-align: right;">Page 133</p> <p>1 I might expect a hundred percent of the 2 population to have signs or symptoms of exposure. 3 So that's why I think it would help me, or perhaps 4 clarify the question for me if there was a specific 5 hypothetical. 6 Q Let me just see if I understand what 7 you've told me so far: Are you saying that you 8 really do not know what the low-end cutoff would 9 be on determining arsine exposure with respect to 10 reading a hemolysis report -- 11 MR. WARD: Object to form. 12 Q (BY MR. TUCKER) -- a plasma free 13 hemoglobin report? 14 A Could you clarify the question. A low-end 15 effect level in terms of producing acute symptoms 16 or chronic symptoms? 17 Q Chronic symptoms. 18 A Could you reframe the question, then, 19 because I didn't understand it. 20 Q We started out with the first thing which 21 your colleague says is that one and a half grams 22 or grams per dekaliter confirms the diagnosis of 23 arsine exposure, whatever he meant by "confirms." 24 A That's correct. I agree that's what it says 25 in the book.</p>	<p style="text-align: right;">Page 135</p> <p>1 and they had one gram per dekaliter of plasma 2 free hemoglobin, one would say, yes, this person 3 was exposed to arsine. 4 Now, it would lower the likelihood that 5 they may need emergency treatment. You might 6 not have to order packed red blood cells and 7 transfuse somebody, but you would say, yes, they 8 were exposed to arsine. 9 Q What if they have a half a gram? 10 A Again, if it's above the laboratory range 11 of normal in a setting where multiple individuals 12 are exposed and they're showing up in the 13 emergency department and there's a pattern where 14 people have elevated plasma free hemoglobins 15 above the upper limit of the lab normal, it 16 becomes very unlikely that they're all due to 17 mechanical artifact -- although that certainly 18 should be considered by the emergency room 19 doctor -- and becomes much more likely that they 20 were exposed to arsine. 21 Now, then the question becomes do they 22 need to be treated in the emergency department, 23 and what are potentially the long-term health 24 effects of that exposure. But we would conclude, 25 yes, they were exposed to arsine, but the next</p>
<p style="text-align: right;">Page 134</p> <p>1 Q You say that's for somebody that's 2 treating somebody that's coming in the door and 3 he wants to know about whether he has to do 4 treatment measures or not. 5 A Correct. 6 Q And if the person has one gram per 7 dekaliter reported as their plasma free 8 hemoglobin, that's most likely arsine, but without 9 doing other stuff you can't guarantee it -- without 10 doing other evaluation of the person, you can't 11 guarantee that's an arsine result, right? 12 A No. That's not what I said earlier. I 13 think that's a different question. 14 Q Well, with one gram per dekaliter -- 15 A If you're -- sorry. 16 Q With one gram per dekaliter, do you have 17 arsine exposure, one gram of plasma free 18 hemoglobin and an opportunity for arsine 19 exposure? 20 A If that's above the upper limit of lab, yes. 21 You would consider that is potentially due to 22 arsine gas exposure in the setting of an arsine gas 23 release where there is a probability that somebody 24 was in the vicinity or could potentially have been 25 exposed and they show up in an emergency room</p>	<p style="text-align: right;">Page 136</p> <p>1 series of questions is, okay, is there acute or 2 chronic toxicity. 3 Q What about if it were a hundredth of a 4 gram? 5 A Again, I think you'd have to 6 hypothetically give me the laboratory, the normal 7 report range for the lab. 8 Q Let's say your man, it's -- what is a 9 normal report range for your laboratory out here 10 in San Francisco? 11 A Offhand, I don't know. 12 Q What was the report range for St. John or 13 St. Francis Hospital in Tulsa? 14 May I see that page real quick? 15 A (Witness examines document.) 16 10.4 percent. 17 Q So using that as your reference range, if 18 a person came in with a hundredth of a gram per 19 dekaliter? 20 A That's within the normal range. 21 Q How about a tenth of a gram? 22 A Again, anything less than 10.4 grams per 23 dekaliter is within the normal range. 24 Q So when you're looking at the reference 25 values you're believing that 10.4 is stating what</p>

8 (Pages 133 to 136)



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1 measurement?

2 A I believe that's in grams per dekaliter.
3 Don't absolutely quote me, because I report it in
4 my table the way it's reported out from the lab;
5 and I don't have the medical records in front of
6 me.

7 Q We were talking earlier about when the
8 information -- I just happened to see as you
9 turned your pages, I see what's marked as
10 Plaintiffs' Exhibit 72. Can you tell what that is?

11 A (Witness examines document.)

12 These are meteorological measurements
13 made by I think the U.S. Weather Service or some
14 equivalent agency.

15 Q Do you know where you got that?

16 A And -- well, I got it from the plaintiff,
17 because it's labeled Plaintiffs' Exhibit 72. It
18 looks like it's derived from a weather station in
19 Tulsa, Oklahoma.

20 Q Looking at that, can you tell me which
21 way the wind was blowing?

22 MR. WARD: Object to the form.

23 THE WITNESS: I can tell you the way the
24 wind was blowing at specific times at that weather
25 station in Tulsa, Oklahoma. I can tell you in

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1 probably ask a meteorologist that question.

2 Q I'm just curious, since you wanted to
3 know the gradients of exposure, knowing which
4 way the wind was blowing would be important to
5 have an understanding of the gradients, wouldn't
6 it?

7 A It's important to the kind of expert that
8 would reconstruct the gradients of exposure, and
9 that would be an industrial hygienist or engineer
10 or a meteorologist who knows how to take this
11 kind of information and combine it with emitted
12 dose from a point source. That is not a physician
13 that would do that kind of reconstruction.

14 Q So would it be important to you to know,
15 for example, if you have a -- if you have what
16 you've described as a point source for an event
17 when you're determining whether you're looking at
18 laboratory data that represents a real dose
19 response to something or represents an artifact or
20 some other similar anomaly in a blood result,
21 wouldn't it be of interest to you to determine the
22 general location of the persons with those results
23 as they relate to the point source and the way the
24 wind was blowing at the time of the point source
25 occurrence?

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1 direction.

2 Q (BY MR. TUCKER) That's what I want to
3 know.

4 A Yes.

5 Q Which way was it blowing?

6 MR. WARD: Object to the form. He only
7 said he could tell you at specific times and
8 specific stations.

9 THE WITNESS: That was my next
10 question to you: At what time?

11 Q (BY MR. TUCKER) Did it turn in
12 different directions, or was it generally the same
13 general direction?

14 A It looks like it was generally in the same
15 direction. It varied from 100 to 200 degrees.

16 Q What does that mean to somebody sitting
17 herelike me that doesn't think about compass
18 points, but thinks about north, south, east and
19 west?

20 A I couldn't tell you. That's beyond the
21 area of my expertise.

22 Q You don't know whether that's coming
23 from the southwest or the northwest or the
24 northeast?

25 A I don't know. You need to ask a --

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1 A Well, it would be important to have as
2 much information as possible, which is why I
3 asked plaintiff counsel if somebody did that kind
4 of quantitative dose reconstruction.

5 I ask for that in all cases that I review,
6 because dose is obviously one determinant of
7 causation in any case or group of cases. So I'd
8 like to have a quantitative measure of dose.

9 And because we don't have that, or at
10 least I don't have that for my review, and I don't
11 know whether it was done and was not shared with
12 me, I did look at the location of the individuals
13 with elevated plasma hemoglobins to try to see
14 whether I could correlate their location and
15 distance from the point source release to see
16 whether it correlated in terms of where they were,
17 distancewise, from the point source.

18 Now, that doesn't give us the complete
19 picture, obviously, because the wind could be
20 blowing completely in the opposite direction, but
21 it gives mesome clue; and I commented on that in
22 my report.

23 Q You did. And I see you have the weather
24 reports there for the day in question that shows
25 what the wind speed was, and you show that it

9 (Pages 137 to 140)



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1 was pretty much from the same consistent
2 direction.

3 Are there people here at the University of
4 San Francisco that you could ask what compass
5 points mean, or could you look in one of your
6 reference sources or look on the Internet, as you
7 did, and determine which direction the wind was
8 blowing?

9 A It would be easy for me to find out what
10 these degree measurements mean in terms of
11 points on the compass, but it wouldn't -- it would
12 help only if it was relevant to the particular
13 exposure situation.

14 In other words, this was taken in Tulsa,
15 Oklahoma. I don't know whether this wind station
16 is relevant to Solkatronics at the point of
17 emission or to the surrounding neighborhood.

18 Q Do you know how far it is from the Tulsa
19 weather station to the Port of Catoosa?

20 A I have no idea.

21 Q Did you look on a map?

22 A No.

23 Q Do you know where the Port of Catoosa
24 is?

25 A No.

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1 tell me which direction from the location of the
2 arsine accident was Mr. Sumter located.

3 A He is to the northwest of Solkatronics.

4 Q Look at Mr. Schnitzer. I believe he may
5 be on your list also, Mr. Bart Schnitzer.

6 A Okay. Help me out with Mr. Schnitzer,
7 because he's not on -- he did not have an elevated
8 plasma hemoglobin and he's not on --

9 Q Did not have.

10 A Mr. Schnitzer, no. He's the one with
11 renal failure, but he did not have an elevated
12 plasma hemoglobin.

13 Q Look at the map of the 13 plaintiffs.

14 A Okay.

15 Q Do you find him on that map?

16 A Yeah.

17 Q Where is he located?

18 A He is --

19 MR. WARD: Object to the form unless
20 you ask at what point in time.

21 Q (BY MR. TUCKER) Where is he located
22 on this map?

23 MR. WARD: Okay.

24 THE WITNESS: Okay. He apparently is
25 at or around Superior Supply & Steel, which is to

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1 Q Do you know where Catoosa is?

2 A In Oklahoma, but exactly where, no.

3 Q Have you ever been to Oklahoma?

4 A No.

5 Q Pull out your little chart there where
6 people are located. Do you have that chart around
7 someplace?

8 A There were several.

9 Q Pull out the one where the folks were
10 located that you found that you charted with
11 having evidence of hemolysis.

12 A Okay.

13 Q Would you agree with the general
14 proposition that before you can have a response to
15 a dose of any material, whether it be arsine or
16 anything else, you first must have an opportunity
17 for exposure?

18 A Yes.

19 Q Now, is one of the people on there that
20 had an issue with in your mind hemolysis a
21 gentleman by the name of Sumter? Is this your
22 chart right here, sir?

23 A Yes. He had a plasma hemoglobin of 111
24 percent.

25 Q Look at your chart, your map chart, and

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1 the east of Solkatronics.

2 Q (BY MR. TUCKER) Kind of in the
3 opposite direction from Mr. Sumter?

4 A Yeah. I won't quibble with kind of -- I
5 mean, one was to the northwest, and the other is
6 to the east.

7 Q Well, they're kind of at opposite ends of
8 the compass, aren't they?

9 MR. WARD: Object to the form.

10 THE WITNESS: Yeah. That's where -- I
11 don't want to quibble with you. But one is at the
12 northwest, the other opposite would be the
13 southwest. So east is the other way, but it's not
14 exactly the other way.

15 Q (BY MR. TUCKER) The other way is close
16 enough for me.

17 A Thank you.

18 Q Knowing that you were giving opinions on
19 people that are at the other way on the compass
20 from each other, didn't it seem like it might be
21 nice to know which way that wind was blowing?

22 A That's why I asked if there was a -- any
23 kind of dose reconstruction done. It's not enough
24 for me to know which way the wind is blowing. I
25 need to put that information, if it's possible, in

10 (Pages 141 to 144)

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1 the hands of people that know how to do this kind
2 of modeling.

3 I've been involved, just parenthetically,
4 in a lot of exposure situations, mass exposures to
5 toxic gas releases in the San Francisco Bay Area.
6 Unfortunately, we have a lot of oil refineries here,
7 and in those situations I have always asked for
8 and sometimes had quantitative dose
9 reconstructions done, and they have to take into
10 account wind conditions and characteristics,
11 chemically, of the compound, and uncertainty
12 factors to make certain assumptions about
13 exposure concentrations. It's not as simple as
14 just knowing wind direction.

15 Q Just so we're clear, you could have found
16 out the wind direction because you had the
17 materials in your file, but you didn't determine
18 what the compass points meant as referenced by
19 the weather reports you had, so you really didn't
20 figure out which way the wind was blowing when
21 you wrote your report?

22 A Yes. Let me be clear: I did not take into
23 account wind direction. What I would take into
24 account, if it would be available, would be a
25 report by an expert in the suitable field of dose

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1 A These two individuals concluded that --
2 and I'm quoting -- "There are no apparent impacts
3 to soil from the July 12th, 2001 arsine gas release
4 at the Solkatronics facility."

5 Q What impact were they evaluating?

6 A They were looking at arsine -- actually,
7 arsenic in the soil.

8 Q And does that have any importance to
9 you, that finding?

10 A No. I don't know how to relate these
11 conclusions, if at all, to airborne exposure to
12 arsine on July 11th, 2001.

13 Q And I know you're not a soils scientist
14 and not purporting to be; is that correct?

15 A Correct. I don't know whether we would
16 expect arsine gas to settle in soil, to increase the
17 amount of arsenic in soil upwind from the point
18 source release. What I take from this report is
19 that the focus here is on whether or not any
20 surface soil cleanup was required pursuant to
21 regulation.

22 Q Did you investigate what happens to
23 arsine once it's exposed to the air?

24 A Could you clarify your question. What do
25 you mean what happens to it?

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1 reconstruction following a point source release.

2 Q What materials have you received since
3 rendering your December 27th report?

4 A Do you want me to list those? They're
5 outlined in my April 30th, 2005 report.

6 Q If you would, please, uh-huh.

7 A I had that report on the meteorological
8 conditions prepared by Dr. Anderson White, a
9 report by Dr. Dean Carter dated March 17th, 2005,
10 a report by Dr. William Banner dated March 17th,
11 2005, a report by Dr. Steven Pike dated March
12 18th, 2005, and two affidavits, one by a Mr. Bruce
13 Stewart and another by Mr. Terry Morris.

14 Q Did you review a subsequent report or did
15 you receive a subsequent report by Shane Gad
16 from the East Coast?

17 A Yes.

18 Q Did you receive any information with
19 regard to soil samples?

20 A Yes.

21 Q What information did you receive with
22 regard to soil samples?

23 A An October 19th, 2001 report from Phil
24 Roberts and Tim Joseph of URS.

25 Q What did you learn from that report?

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1 Q When the arsine is released, does it stay
2 arsine forever? Did you investigate, did you look
3 up what happens to arsine when it exists free of a
4 cylinder out in the air, chemically what happens
5 to it?

6 A No, I did not look that up.

7 Q Do you have any idea?

8 A I do not know. I don't know what
9 happened over a period of hours or even minutes
10 to hours to weeks to months.

11 Q In making your differential diagnosis,
12 wouldn't it be important to know if the arsine
13 that's released remains arsine or decomposes into
14 some other materials, and if so, what the rate of
15 decay is, or decomposition of those materials,
16 wouldn't that be important?

17 A That would be important as part of a dose
18 reconstruction, you know, the exposure gradient,
19 the risk assessment, whatever we want to call this
20 analysis, that takes into account meteorological
21 conditions, distance from the point source release
22 and any changes in the arsine gas over time. This
23 would all be important in determining what we
24 call, you know, isopleths, you know. You can map
25 out what the potential concentration and parts per

11 (Pages 145 to 148)



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ROBERT HARRISON

June 22, 2005

<p style="text-align: right;">Page 149</p> <p>1 million is at distances from that point source. 2 Q You indicated that you had received 3 affidavits. 4 Were those the affidavits of Mr. Morris 5 and Mr. Stewart? 6 A Yes. 7 Q Have you had the opportunity to review 8 the depositions of Mr. Morris and Mr. Stewart? 9 A No. 10 Q What was significant to you, if anything, 11 about the affidavits of Mr. Morris and Mr. 12 Stewart? 13 A They suggested that there was more than 14 just a single release of arsine gas on July 11th, 15 2001, that there were working conditions that they 16 described that indicated that there may have been 17 other exposures as well. 18 Q Is the file which you have in front of you 19 which we've been marking off and on, is that all 20 the materials that you relied upon to form your 21 opinions in your reports? 22 A Aside from the references that I attached 23 to my original report, that's correct. 24 Q Yes, sir. 25 Did you review -- did you review Shane</p>	<p style="text-align: right;">Page 151</p> <p>1 THE WITNESS: That assumes that I like 2 to use a yellow highlighter. 3 Q (BY MR. TUCKER) Do you know who did 4 highlight these? 5 A I do not. 6 Q Do you know why they were highlighted? 7 A No. 8 Q Are you capable of doing your 9 own highlighting if you choose to do so? 10 A Yes. I've been a student for many years. 11 I know how to highlight. 12 Q So with respect to the report of December 13 30, '04, did you agree with Shane Gad's findings? 14 MR. WARD: Object to the form. Again, 15 which findings? 16 MR. TUCKER: Let me rephrase the 17 question to satisfy Counsel. 18 Q Did you agree with all of his findings? 19 Let me ask it another way: Did you agree with any 20 of his findings? 21 A Yes. I agreed with his findings, but to 22 properly answer your question, I need a few 23 minutes to read through Dr. Gad's report and see 24 if there are areas of disagreement. 25 Q Fine.</p>
<p style="text-align: right;">Page 150</p> <p>1 Gad's original report? 2 A Let me tell you exactly the reports that I 3 did review of Dr. Gad: December 30th, 2004 and 4 April 15th, 2005. 5 Q Did you agree with his reports? 6 A Can you be more specific? He reached a 7 lot of conclusions. 8 Q May I see your copy -- I see you've 9 highlighted it. Let me ask you some questions 10 about the Gad materials that you have there. 11 A Just to clarify -- 12 MR. WARD: Object to the form. You're 13 assuming he's the one that highlighted it. 14 THE WITNESS: I was going to mention 15 that I did not do the highlighting. 16 Q (BY MR. TUCKER) Who did the 17 highlighting? 18 A I don't know. 19 Q Did it arrive in your possession 20 highlighted? 21 A Yes. 22 Q So you might or might not have 23 highlighted the same things; is that right? 24 MR. WARD: He hasn't testified he 25 highlighted any of it.</p>	<p style="text-align: right;">Page 152</p> <p>1 (Recess taken.) 2 THE WITNESS: On page 1 and 2 Dr. Gad 3 lists the signs and symptoms of arsine exposure 4 for arsine toxicity. And I agree with those. 5 He then goes through each individual and 6 gives an opinion about whether or not the 7 individual was exposed to arsine and has current 8 medical problems due to that exposure. And if 9 you like, it may be easier to just go through them 10 one by one. 11 Q (BY MR. TUCKER) Why don't you tell me 12 what you disagree with. That's where I'm going to 13 go with this anyway, as to what you disagree with, 14 if anything. 15 A Generally, I'm in agreement, but my 16 review of their medical records was done 17 independently, and I come to in most of the cases 18 similar conclusion, but in some cases our opinions 19 may differ slightly. 20 Q Tell me the ones that are different. 21 A Okay. I think it's easier to go through 22 them one by one. 23 Q Well, if you want to. 24 A Yeah. I mean, I think it's actually easier, 25 because that's the way he organized it, and that's</p>

12 (Pages 149 to 152)

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1 the way it's organized in my table.
 2 Q Okay. This table?
 3 A Yes. It's the table attached to my
 4 original report.
 5 For Mr. Charles Biddle I agree with Dr.
 6 Gad that I'm not able to render or give an opinion
 7 without additional information on the time frame
 8 when Mr. Biddle began experiencing headache and
 9 memory loss. These are central nervous system
 10 symptoms that are consistent with the effects of
 11 arsine poisoning, but I need more information. So
 12 I'm generally in agreement with Dr. Gad.
 13 Should I continue?
 14 Q Please.
 15 A For Javier Cardenas I'm in agreement
 16 regarding the central nervous system symptoms
 17 that are consistent with the effects of arsine gas
 18 exposure.
 19 For Linda Castro I'm in agreement that
 20 she was exposed to arsine. Dr. Gad mentions
 21 significant kidney problems starting shortly after
 22 the exposure. He may be looking at different or
 23 other medical records. I didn't see that in my
 24 review. So I'd need more information. And I'm in
 25 agreement that her central and her peripheral

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1 Bart Schnitzer I'm in agreement with Dr.
 2 Gad, central nervous system symptoms consistent
 3 with the effects of arsine gas exposure.
 4 Mr. Schnitzer has developed renal failure
 5 that I think is not related to the arsine gas
 6 exposure that is mentioned by Dr. Gad.
 7 Q Not related?
 8 A I do not believe that is related to the
 9 arsine gas exposure. That occurred seven months
 10 after exposure. He had an increase in one of his
 11 antibodies against kidney marker. Time frame
 12 doesn't fit.
 13 Jennifer Shavers I'm in agreement with
 14 Dr. Gad, central nervous system symptoms
 15 consistent with the effects of arsine, but need
 16 more information.
 17 Q What do you mean, "need more
 18 information"?
 19 A I am in agreement with Dr. Gad. I don't
 20 have an opinion at this point. Her symptoms
 21 currently are consistent, but there are some gaps
 22 in the record. Ideally I'd have more information on
 23 Ms. Shavers. She was not seen on the date of the
 24 incident. So there's no documentation in the
 25 medical records on her acute symptoms.

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1 nervous system symptoms are consistent with the
 2 effects of arsine exposure.
 3 Obdulio Guerra I'm in agreement with Dr.
 4 Gad.
 5 Theresa Haggard I'm in agreement,
 6 particularly as it affects the central nervous
 7 system symptoms, headache and fatigue. Those
 8 symptoms are consistent with the effects of arsine
 9 gas exposure.
 10 Josh Hinton I'm in agreement with Dr.
 11 Gad, again, central nervous system symptoms.
 12 Doug Ingram I'm in agreement with Dr.
 13 Gad. Again, his central nervous system symptoms
 14 are consistent with the effects of arsine gas
 15 exposure.
 16 Karl Kharas I'm in agreement with Dr.
 17 Gad, again, central nervous system symptoms
 18 consistent with the effects of arsine gas exposure.
 19 Allen Miller I'm in agreement with Dr.
 20 Gad, central nervous system symptoms consistent
 21 with the effects of arsine gas exposure.
 22 Dale Patton, I'm in agreement with Dr.
 23 Gad, specifically central and peripheral nervous
 24 system symptoms consistent with the effects of
 25 arsine gas exposure.

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1 And then the last one is Joe Sumter,
 2 S-u-m-t-e-r. I'm in agreement with Dr. Gad,
 3 peripheral and central nervous system symptoms
 4 consistent with the effects of arsine gas exposure.
 5 Q Are you Board certified in toxicology?
 6 A No.
 7 Q Do you consider yourself an expert in
 8 toxicology?
 9 A Yes.
 10 Q Have you ever taken the Boards for
 11 toxicology?
 12 A No.
 13 Q Do you consider yourself an expert in
 14 epidemiology?
 15 A Yes.
 16 Q Is there a Board certification process for
 17 that specialty?
 18 A No.
 19 Q Are you Board certified in neurology?
 20 A No.
 21 Q Did you do any investigation about the
 22 nature of arsine gas?
 23 A Could you clarify your question.
 24 Q Well, for example, do you know the
 25 molecular weight of arsine?

13 (Pages 153 to 156)



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1 A I have lots of material. I could give you
2 the molecular weight of arsine from all the
3 material that I reviewed.
4 Q Did you review for the molecular weight
5 of arsine? Did you look it up?
6 A Yes. I mean, it's in all the material that
7 I've reviewed. It's in multiple locations.
8 Q Do you know what the relative density is
9 of arsine gas relative to atmosphere?
10 A It's in the material. The answer is no;
11 and I could give it to you if you like. I don't know
12 it from memory.
13 Q Okay.
14 You don't know the decomposition rate of
15 arsine gas?
16 A Again, I could give you the number by
17 looking at the material. I don't know it from
18 memory.
19 Q Was that something you looked up as a
20 part of your evaluation of this case?
21 A Yes. It's something that I looked up, I
22 reviewed, to understand and to refresh my memory
23 and to evaluate the toxicology of arsine gas.
24 Q What in epidemiology is a chronic
25 exposure?

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1 A These people were not exposed over days.
2 We're talking, in my opinion -- my opinion is
3 pertinent to the July 11th, 2001 exposure.
4 Q So you're ruling out anything other than
5 acute exposure from this July 11th incident?
6 A I am not ruling it out, but I don't have an
7 opinion about whether there may have been other
8 exposures over time.
9 Q The opinions you're testifying about in
10 this case are limited to the exposure on July 11th,
11 2001; is that correct?
12 A Correct. There may have been other
13 intermittent exposures to some or all of these
14 individuals, but my opinion is confined to the July
15 11th, 2001 arsine release.
16 Q Speaking generally, then, what are the --
17 would be the differences in the symptoms from a
18 chronic exposure? What are the symptoms that a
19 continuing or chronic exposure would cause?
20 A And we're defining chronic for the
21 moment as exposure, ongoing exposure to arsine
22 over months to years?
23 Q Yes, sir.
24 A Okay.
25 Headache, fatigue, low-level nausea,

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1 A Exposure that occurs over time. It's
2 usually considered months to years as opposed to
3 acute exposure, which would be minutes, days, to
4 weeks.
5 Q Does an acute exposure differ in
6 symptoms from a chronic exposure?
7 A It may.
8 Q How?
9 A It depends on the chemical. There's some
10 overlap, but there are also, depending on the
11 chemical, differences in the signs and symptoms.
12 Q With arsine gas what would the
13 differences be?
14 A The acute exposure presents with nausea
15 or can present with symptoms such as nausea,
16 vomiting, abdominal pain, headache, dizziness,
17 weakness. The chronic symptoms that are
18 reported -- well, let me -- let me differentiate
19 before I answer the question.
20 There are symptoms of chronic arsine
21 exposure, that is somebody exposed over days.
22 Q That's my question. We're on the same
23 page if you answer that question.
24 A Okay, because that's not the case here.
25 Q We're on -- okay.

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1 numbness and tingling in the hands and feet,
2 dizziness, trouble concentrating, memory loss.
3 Q Now, those are all self-reported
4 symptoms, aren't they?
5 A Symptoms, by definition, are
6 self-reported.
7 Q Okay.
8 Those are all self-reported -- those are
9 all things that are self-reported?
10 A They're all complaints.
11 MR. WARD: Object to the form. Asked
12 and answered.
13 THE WITNESS: They're all problems that
14 are reported by individuals. They're what we call
15 subjective. They're symptoms that are reported by
16 a patient or an individual.
17 Q (BY MR. TUCKER) And you told us
18 earlier that that's why uniquely with arsine you
19 have this opportunity to look at whether or not
20 hemolysis has occurred by taking blood tests; is
21 that right?
22 A Correct.
23 Q Because the red blood cell is
24 uniquely responsive to the contact with arsine,
25 isn't it?

14 (Pages 157 to 160)



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1 A Correct.
 2 Q And when it contacts arsine, as I
 3 understand, and correct me if I'm wrong, in
 4 general terms, the red cell ruptures and that
 5 releases the contents of the cell resulting in being
 6 able to measure plasma free hemoglobin?
 7 A Correct.
 8 Q That's why we look to that to determine
 9 whether or not a person has any objective or
 10 laboratory findings of a possibility of arsine
 11 exposure; is that right?
 12 A Correct.
 13 Q Now, remember we also looked at the book
 14 that you wrote, yesterday, do you remember that,
 15 the chapter that you wrote --
 16 A Yes.
 17 Q -- in a different book?
 18 And in what sense did you mean --
 19 remember we read from it yesterday? This is the
 20 chapter we're talking about, "Chemicals and
 21 Gases" by Robert Harrison.
 22 A Yes.
 23 Q What book did that appear in?
 24 A Called "Primary Care."
 25 Q "Occupational and Environmental

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1 spilling out into the urine. That's the hemoglobin
 2 molecule circulating in the urine. Hematuria are
 3 the actual intact red cells that are spilling out
 4 into the urine.
 5 Q Can both discolor the urine?
 6 A Yes.
 7 Q And what is the laboratory procedure for
 8 evaluating urine?
 9 A There is a chemical test for the
 10 hemoglobin molecule in the urine, it's called a
 11 dipstick.
 12 Q So you put the dipstick in the urine and
 13 read the dipstick.
 14 What does that tell you?
 15 A That tells you whether there's hemoglobin
 16 in the urine, that could be the circulating
 17 hemoglobin molecule, or it could be the red blood
 18 cell itself.
 19 Q So for laboratory procedures, you put the
 20 dipstick in the urine, and if the dipstick reacts,
 21 then you find that you have hemoglobin in the
 22 urine and then you must do a further test to
 23 determine whether it's hematuria or
 24 hemoglobinuria; is that correct?
 25 A Correct.

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1 Medicine"?
 2 A No. That's not in the -- oh, yeah, it is
 3 "Primary Care Occupational and" -- no, it's not.
 4 That series is called "Primary Care." This was a
 5 special issue on occupational and environmental
 6 medicine.
 7 Q But you wrote it?
 8 A I did.
 9 Q And on page 975, let me read to you what
 10 you wrote talking about arsine gas.
 11 A (Witness nods head.)
 12 Q "Physical examination may reveal a
 13 bronze skin color and enlarged liver."
 14 Do any of the medical records that you
 15 reviewed for any of the persons that are presented
 16 as claimants here demonstrate a bronze skin color
 17 or enlarged liver?
 18 A No.
 19 Q "Laboratory tests --" you wrote -- show a
 20 picture of hemolytic anemia, elevated plasma
 21 hemoglobin and hemoglobinuria"; is that correct?
 22 A Correct.
 23 Q What is the difference between
 24 hemoglobinuria and hematuria?
 25 A Hemoglobinuria is hemoglobin that's

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1 Q What is the further test that you then
 2 perform?
 3 A You look under the microscope to see if
 4 there are red cells.
 5 Q To determine that you have hematuria or
 6 free red blood cells in the urine, what do you see
 7 in the microscope?
 8 A You see more red blood cells than would
 9 normally be in the urine. There's about three to
 10 five per field that you look at under the
 11 microscope.
 12 Q If you do not see an increased elevation
 13 of red blood cells but you have a reaction on the
 14 dipstick, what then do you have?
 15 A Hemoglobinuria.
 16 Q And it's hemoglobinuria that you
 17 indicated in your article, which would be elevated
 18 plasma hemoglobin, hemolytic anemia and
 19 hemoglobinuria; is that right?
 20 A Yes.
 21 Q Which of the 13 plaintiffs about which
 22 you have given an opinion's laboratory responses
 23 indicated hemoglobinuria?
 24 A (Witness examines document.)
 25 I don't think it was measured. I was

15 (Pages 161 to 164)



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1 pretty sure when I went through their medical
2 records and summarized them in my table that I
3 made a note of whether hemoglobinuria was --
4 well, I made a note whether the urine was dipped
5 for hemoglobin, and I don't believe it was, or if it
6 was, I didn't put it in my table.

7 Q Do some of those reports demonstrate
8 that urine was evaluated for red blood cells?

9 A Oh, yeah. Okay. There was one -- let me
10 see, there were two. Castro had negative blood,
11 but that was on July 14th, 2001, three days after
12 the arsine release. Hinton had a urinalysis that
13 was negative for blood. Okay. I guess -- okay.

14 They were measured. I stand corrected.
15 Ingram had a UA that was negative for blood.
16 Kharas' UA was negative for blood. Miller negative
17 for blood. And Sumter negative for blood.

18 Q Sumter negative for blood?

19 A Yeah.

20 Q When you say "negative for blood," that
21 means the dipstick never reacted?

22 A Correct.

23 Q So they never tried to divide up whether
24 they had hemoglobinuria or hematuria, correct?

25 A Correct. It probably means they didn't

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1 A That's not what I meant, no. That's
2 incorrect.

3 Q How about one percent?

4 A What I would say in response to your
5 question, if I wrote it in the book, if it was
6 designed for this purpose, if a clinician needs to
7 have evidence of arsine exposure, they could use
8 any combination of markers of hemolysis, that
9 includes hemoglobin, hematocrit, hemoglobinuria,
10 haptoglobin or plasma free hemoglobin.

11 In a setting of multiple exposure or point
12 source release, if there's evidence that many
13 individuals above the range of laboratory or
14 mechanical abnormality appear with abnormalities
15 in any one of those tests, the clinician should
16 suspect arsine gas exposure and follow these
17 individuals, observe them in the emergency
18 department to determine if they require more
19 emergent treatment.

20 Q I'm just trying to put these things
21 together.

22 Did any of the folks on your sheet there
23 have a plasma hemoglobin level reported greater
24 than 1.5 percent?

25 A Well, that's interesting, because the

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1 have hemoglobinuria.

2 Q To get back to my specific question, in
3 the medical records did any of the 13 plaintiffs'
4 medical records demonstrate any finding of
5 hemoglobinuria?

6 A No -- well, for the ones who were tested,
7 no. There were some that weren't tested, and we
8 don't know.

9 Q Your next sentence says, "A history of
10 arsine exposure with a plasma hemoglobin level of
11 greater than 1.5 percent confirms the diagnosis of
12 arsine poisoning."

13 In what sense were you using the word
14 "confirms," Dr. Harrison?

15 A To guide treatment of acute arsine
16 poisoning. Not to guide an opinion about whether
17 or not somebody was or was not exposed to arsine.
18 I didn't discuss that in the chapter that I wrote.

19 Q Can we presume, then, since you say a
20 history of arsine exposure with a plasma
21 hemoglobin level of greater than 1.5 percent
22 confirms the diagnosis of arsine poisoning, would
23 you agree, then, that a plasma hemoglobin level of
24 less than 1.5 percent would not have a confirmed
25 diagnosis of arsine poisoning?

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1 lab -- whatever that hospital was, I can't
2 remember now -- reports normal less than 10.4
3 percent. That's their upper limit of normal.
4 There were many of these individuals that had
5 elevated plasma hemoglobins. The highest
6 recorded among these 13 individuals was Mr.
7 Ingram at 33 percent -- I'm sorry. No. It was Mr.
8 Sumter. He had a plasma hemoglobin of 111
9 percent.

10 So I don't know if what we're dealing with
11 is, you know, difference in the way the lab is
12 reporting their normal values compared to the way
13 I read it in the literature and reported it in my
14 book.

15 But the short answer to your question is
16 yes, but I'm going --

17 Q I forgot my question.

18 A Your question was did any of them have
19 elevated plasma hemoglobin above one percent.

20 Q No. My question was one and a half
21 percent as used in your book.

22 A Right. As used in my book, yes, they all
23 did, but I think what's more important to know is
24 what the lab range of normal value is in the
25 emergency department.

16 (Pages 165 to 168)



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1 Q Here's my question: If you've got so
2 many folks that are far over that value, for
3 example, you said 1.5 percent, which is one and a
4 half grams per dekaliter, confirms the diagnosis,
5 you also say that above 1.5 percent one author
6 has recommended transfusion. Yet all these folks
7 with levels that appear to you to be perhaps as
8 much as a factor of a hundred times higher than
9 the amount, that confirms the arsine doses, and
10 yet nobody had an exchange transfusion.

11 How do you account for those? Are
12 those folks in Tulsa incompetent?

13 A No. I think what accounts for it is the
14 reference that I made when I wrote one and a half
15 percent may be different from the way the lab in
16 Tulsa is running their plasma free hemoglobins
17 and reporting the normal change.

18 Q Well, I have your article here. I want to
19 ask you a couple other questions while you've got
20 your chart handy too.

21 In talking about arsine you talked about
22 manifestations include malaise, weakness,
23 dizziness, so forth, and nausea.

24 A (Witness nods head.)

25 Q Those are the self-reported and, as your

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1 entirely depends on the dose and duration; is that
2 right?

3 A Not completely. It depends on the dose
4 and duration of exposure within a variability of
5 human response. So to any given dose, duration
6 of exposure, if there's a hundred people exposed
7 to that same level for the same period of time,
8 there will be some variability in response.

9 Q Something doesn't have to be a poison to
10 kill you; is that right? By that I mean water can
11 kill you if you have too large a dose?

12 A Correct.

13 Q Or I suppose, for that matter, so could
14 Diet Coke?

15 A I suppose so. Diet Coke is a lot less
16 toxic, one would hope, than arsine gas.

17 Q We'd hope no more toxic than water,
18 right?

19 A Well, I don't think water is toxic.

20 Q But water, if you have too much of it, if
21 the dose is too large, even water can kill you?

22 A If a person has a severe medical
23 condition, it's rare, but it causes people to drink
24 water constantly, their thirst mechanism is
25 defective, and those people can run into medical

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1 counsel suggested, subjective symptoms; is that
2 right?

3 A Yes.

4 Q These acute symptoms are followed in
5 four to six hours with urine darkened by
6 hemoglobin, right?

7 A Correct.

8 Q So we have no record of that?

9 A Correct.

10 Q Jaundice appears after 24 to 48 hours.

11 We have no record of that; is that
12 correct?

13 A Correct.

14 Q And the jaundice really is the bronzing
15 of the skin?

16 A Correct.

17 Q The triad of abdominal pain, hematuria
18 and jaundice is characteristic.

19 And by hematuria we're referring to it as
20 a subset —

21 A Correct.

22 Q We don't have any evidence of that?

23 A Correct.

24 Q I think you previously suggested that
25 what happens when you're exposed to something

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1 problems.

2 Q I mean, we read —

3 A That's a disease condition.

4 Q But you can overdose on water
5 sufficiently if you sit here and there's a condition
6 when you drink too much water. Is there a
7 medical name?

8 A There's a medical condition. It's a rare
9 medical problem where somebody — where their
10 thirst mechanism does not shut off. But aside
11 from that rare medical condition, it's impossible
12 to overdose from water.

13 There's also, of course, a difference
14 between intentional and unintentional exposure.
15 With cases of chemical exposure, unless somebody
16 is suicidal, people don't intend to be exposed to
17 these toxic substances. They didn't make a choice.

18 Q You said earlier that you understood
19 there were close to some 200 people that were
20 making a claim here?

21 A 192 is my understanding.

22 Q Are you aware that Dr. Hastings has given
23 an opinion and claimed that all of those 192
24 plaintiffs have central nervous system damage?

25 A I'm not aware of that. I just am aware of

17 (Pages 169 to 172)



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1 the 13 reports that Dr. Hastings has issued.
 2 Q We talked about artifacts that can cause
 3 elevated plasma free hemoglobin levels above a
 4 normal reference range.
 5 A (Witness nods head.)
 6 Q We've talked about the way that the blood
 7 is drawn can do it; is that right?
 8 A Yes.
 9 Q And that would be would a too-small
 10 needle bore could do it?
 11 A Yes.
 12 Q A too-large needle bore could do it?
 13 A Yes -- I don't know.
 14 Q Would the speed with which it's drawn do
 15 it?
 16 A Not to my knowledge. When you say
 17 speed, I mean, if you draw the blood with a lot of
 18 suction?
 19 Q Yes.
 20 A I think -- I would have to say conceivably
 21 theoretically, but that's not usually a
 22 consideration when blood is drawn in the
 23 emergency department. It's either by highly
 24 trained or skilled nurses or phlebotomists.
 25 They're generally not -- if they can't draw blood

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1 Q I'm thinking about something out of the
 2 laboratory setting, like, for example, spider bites.
 3 A Oh, you mean are there other causes of
 4 intravascular hemolysis? Oh, yes. I hadn't
 5 considered those, but, yes, certainly spider bites.
 6 There might be other insect bites that cause a
 7 toxin to be injected into the body to cause
 8 hemolysis.
 9 Q What are they besides -- can you think of
 10 some other things besides spider bites?
 11 A Not offhand. There's a long list of causes
 12 of intravascular hemolysis.
 13 Q Could you name some?
 14 A A lot of other medical conditions.
 15 Q Could you name some of them?
 16 A I think you might have asked me this
 17 question yesterday, but they include the hemolytic
 18 anemias, an immune disorder that causes the body
 19 to destroy red blood cells, chronic liver problems
 20 with scarring of the liver, enlargement of the
 21 spleen.
 22 Q How about sunburn?
 23 A Not heard of that.
 24 Q How about bruising?
 25 A Bruising could cause you to have -- if it

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1 from a vein, they're generally not sucking to try to
 2 get every last ounce of blood out of somebody.
 3 Q In toxicology is there a particular kind of
 4 technique for drawing blood to determine arsine
 5 levels or to determine plasma free hemoglobin
 6 levels that are considered to be better than others
 7 to draw that?
 8 A Not that I'm aware of. I'm not aware of
 9 any specific instructions in an emergency
 10 department other than routine venipuncture using
 11 the vacuum type of tubes that are used in
 12 everyday practice. Those would be, I would
 13 consider -- I believe those are satisfactory. The
 14 vacuum pressure on those tubes do not hemolyze
 15 red blood cells.
 16 Q Can other things other than the artifacts
 17 caused by the removal of blood also cause
 18 hemolysis? Other than arsine, what else can cause
 19 it?
 20 A I'd have to check this, but you might have
 21 an issue if the blood was sitting around a lab, you
 22 know, whether you could get some hemolysis from
 23 direct mechanical, you know, transport of the
 24 blood in a laboratory setting. I guess that's
 25 conceivable.

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1 was a severe bruising. Or, for that matter,
 2 marathonrunners, if you check their blood after a
 3 26-mile run, they'll have small amounts and
 4 sometimes even larger amounts of blood in their
 5 urine, but they actually don't have hemolysis.
 6 They have destruction of muscle which causes
 7 myoglobin to come out into the urine, but you can
 8 pick that up spuriously. You would think it's
 9 blood, but it's actually another form of protein.
 10 Q We're talking about hemolysis in the
 11 blood that we picked up and reported as plasma
 12 free hemoglobin is what I'm looking for.
 13 A I'm not aware of that.
 14 Q How about heavy manual labor?
 15 A I don't think it could cause intravascular
 16 hemolysis. You could get the myoglobin or the
 17 muscle protein. I don't think you could get the
 18 intravascular hemolysis just from heavy exercise.
 19 Q Do you have a map that demonstrates
 20 where the various 13 folks are that you've given
 21 opinions on? And do you have any opinion as to
 22 the concentration levels of what the gas was in
 23 your opinion that they were exposed to in their
 24 particular areas?
 25 A In terms of the concentration levels,

18 (Pages 173 to 176)



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1 numberswise --

2 Q Yes.

3 A -- is that what you're asking?

4 Q Yes.

5 A No. I don't have a number to attach to it.

6 My only opinion is that there was enough arsine
7 exposure to cause absorption as evidenced by the
8 increase in several of these individuals of plasma
9 free hemoglobin.10 Q If the evidence were that none of these
11 individuals had an increase in plasma free
12 hemoglobin, would you believe that there was no
13 evidence that they had any effects from the arsine
14 incident?

15 MR. WARD: Object to the form.

16 THE WITNESS: I'd have to know -- I
17 think that's sort of a hypothetical question. You
18 know, if hypothetically none of them had elevated
19 plasma free hemoglobins that were caused by
20 exposure to arsine, that they were caused by other
21 medical conditions or mechanical problems.22 Q (BY MR. TUCKER) My question is if you
23 look at a person who doesn't have an elevated
24 plasma free hemoglobin then and was tested
25 contemporaneously with the event, within that

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1 symptoms without having a level of hemolysis?

2 MR. WARD: You mean any level of
3 hemolysis?4 Q (BY MR. TUCKER) An abnormal level of
5 hemolysis.6 A I don't think you'll find an opinion on
7 that question in the literature.8 MR. TUCKER: Can we take a bathroom
9 break?

10 THE WITNESS: Absolutely.

11 (Recess taken.)

12 Q (BY MR. TUCKER) You indicated in your
13 report that you reviewed an MSDS; is that correct?

14 A Yes.

15 Q What is your understanding of what an
16 MSDS is?17 A It's a summary of the ingredients and
18 their associated physical, chemical toxicity,
19 health effects, emergency procedure,
20 characteristics --

21 Q What --

22 A -- that accompanies a product.

23 Q What does it stand for, MSDS?

24 A Material safety data sheet.

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1 time frame that you would have an elevated
2 plasma free hemoglobin response and they don't
3 have one, would you be telling us that nonetheless
4 because they have a headache and claim they're
5 dizzy that they had exposure to arsine?

6 MR. WARD: Object to the form.

7 THE WITNESS: If the plasma free
8 hemoglobin was normal or if all the other
9 biological measures of arsine exposure that we
10 mentioned are regular, were within the normal
11 range, I would either conclude that they were not
12 exposed to arsine gas or they were exposed to
13 arsine gas at a level that wasn't sufficient to
14 cause enough intravascular hemolysis to cause
15 abnormalities in any of these lab tests.16 So, in other words, they still could have
17 been exposed, but we just didn't pick it up on the
18 lab tests. So then the question would become,
19 well, are the symptoms that you're reporting to me
20 caused by exposure and we just didn't have a
21 normal lab test, or are they caused by something
22 else.23 Q (BY MR. TUCKER) Do you know of any
24 peer-reviewed literature that says that you can
25 have arsine exposure sufficient to cause physical

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1 Q Do you know who prepares the MSDS for a
2 particular substance?3 A It varies company to company. There's no
4 law that says who actually prepares it. Sometimes
5 it's a toxicologist. Sometimes it's a physician,
6 contract firm.

7 Q Let me rephrase the question.

8 Would it be correct to say that MSDS
9 is prepared or obtained by an individual
10 manufacturer to affix to its product when it's
11 shipped?12 A Yes. I mean, that's -- the manufacturer
13 of the product originates the material safety data
14 sheet, and usually sends it with the product to the
15 user.16 Q And as I understand, there is no -- while
17 there may be a federal requirement that there be
18 an MSDS, there is no federal standard that
19 approves a particular MSDS; is that right?

20 A That's correct.

21 Q Are MSDSs peer reviewed?

22 A If by that you mean they're submitted to
23 a scientific journal or authoritative organization
24 with objective anonymous outside peer review,
25 they are not.

19 (Pages 177 to 180)



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1 Q That's what peer review means generally,
2 isn't it?

3 A Yes. I just want to be sure we agree.

4 No, MSDSs are not what we would
5 consider to be peer-reviewed documents.

6 Q Did you make any determination of
7 whether or not there were any people working at
8 Solkatronics on the day of this event?

9 A I made no independent determination.
10 The report about the incident which I mentioned
11 earlier has some information in it describing
12 the circumstances, the exposure and some of the
13 individuals involved in the response, but I didn't
14 make a determination of how many were actually
15 employed by Solkatronics and where.

16 Q Would you expect -- whatever the
17 dispersion model for this dose response curve that
18 you talked about earlier might be, would you
19 expect that the further you got from the initial
20 point of release, the more dispersed the gas would
21 be, or, said another way, the lower the
22 concentration of the gas?

23 A As a general assumption, yes. There
24 might be some variability depending on the
25 topography or buildings that are in the way, but

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1 A No.

2 Q If there were Solkatronics employees that
3 were actually in the cloud that was released,
4 would you expect them to show the most reaction?

5 A If the Solkatronics employees were in the
6 cloud of arsine gas and they were the closest to
7 the point source, yes, I would expect them to have
8 among the highest doses of arsine gas.

9 Q Would you expect them to be most likely
10 to have had a hemolytic reaction?

11 A Depending on the concentration of arsine
12 gas to which they were exposed. If they had the
13 highest concentration, I would expect them to have
14 the greatest potential for the hemolysis reaction
15 showing up in blood tests.

16 Q Did you read how the accident occurred?

17 A Yes.

18 Q And did you read that when the accident
19 occurred that the gas was released?

20 A Yes.

21 Q Did you read that something caused that
22 gas to become a cloud?

23 A Yes.

24 Q And you understand that arsine itself is
25 colorless, right?

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1 generally speaking, yes.

2 Q The closer you are, the more dense the
3 concentration?

4 A Yes.

5 Q Do you know whether -- I gather that you
6 do know that there were people working at the
7 Solkatronics plant when this incident occurred?

8 A Yes.

9 Q Do you know how those employees were
10 affected by the event?

11 A I do not.

12 Q Do you know whether any of those
13 employees came into contact with the cloud?

14 A I do not.

15 Q Did you read whether any of the
16 employees were actually exposed to the gases that
17 traveled out from under the -- mechanically from
18 where the accident occurred?

19 A I don't know.

20 Q Did you ask for the medical records of the
21 Solkatronics employees?

22 A No.

23 Q Did you review any information that
24 determined -- that disclosed the medical records
25 of the Solkatronics employees?

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1 A Yes.

2 Q But the fact that it turned to a cloud
3 created some opportunity to track what happened
4 to it, didn't it?

5 A Yes.

6 Q Do you know how long it stayed together
7 as a cloud before it dispersed and was not
8 sufficiently concentrated to be so identified
9 anymore?

10 A No.

11 Q Do you know where it went when it
12 escaped?

13 A No. I mean, you mean the direction and
14 the exact locations about where it went; is that
15 what you mean?

16 Q Generally. Do you know generally where
17 it went?

18 A It went into the air, but the direction and
19 the exposure concentrations --

20 Q When you read the statement, the report,
21 incident report from Eugene Ngai, did he talk
22 about the fact that there were Solkatronics
23 employees on the roof that were in the cloud?

24 A I don't remember.

25 Q Would it be significant to you to know

20 (Pages 181 to 184)



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